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Note : This document is being updated daily and organized better with information already published in my web-site <http://oldthoughts.wordpress.com>. Please bookmark and check back frequently, or visit the web-site. Satya Sarada Kandula

Related Scribd documents : <http://www.scribd.com/doc/32256378/Hindu-Predictive-Astrology> and <http://www.scribd.com/doc/19702375/How-Many-Kinds-of-Yugas-Are-There>

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Introduction

Why study Geo-Centric Astronomy?

Posted by [satyask](#) on December 11, 2009

To understand the astronomical significance of the Puranas, it is necessary to have some idea of the geo-centric (earth-centred) astronomical model used by Ancient Indian Astronomers (Rishis and others). A helio-centric (sun- centred) model, simplifies a lot of calculations and is the preferred model in modern science.

But if you step outside and look at the sky and see the sun-rise and sun-set, the full moon and the new moon, you will find that geo-centric astronomy makes more intuitive sense. So what we will be doing is trying to place ourselves in the minds of our forefathers and see the world as they saw it.

Much of the knowledge that they had did not require extra-terrestrial genes or divine revelation. It required careful observation, excellent mathematics, brilliant insights and great dedication to the science.

It also needed a society which valued truth and knowledge. And that was the society of Ancient India.

It was as difficult to afford advanced education for all then as it is now. So puranas with their high appeal were overlaid with astronomical significance, such that the 'facts' were retained even if the 'derivations' and 'logic' was available only to those who dedicated their life to study.

It was a society that placed the knowledgeable and wise people above the rulers in status while at the same time ensuring that they had neither the power of wealth nor arms and at the same time required strict discipline and self-denial from them.

It was a society that trusted the spoken word and put all the knowledge in to metrical form such that any mispronunciation or interpolation would be evident. It was a society that then introduced many different forms of preserving the oral tradition, with recitals from back to front, alternating words etc, such that the word was incorruptible.

It is possible that the most knowledgeable phycists today know more about astronomy and physics than the rishis of the ancient times. It is certain that the rishis of the ancient times knew more than the 'average' or 'lay person' of today, and definitely knew more than they are given credit for, by the general populace.

Then why study ancient science at all? Why not study modern physics and be done with it? There is too much to know anyway.

A part of the answer to this can be national pride. A part of the answer to this can be justice and giving credit where it is due. A part of the answer to this can be curiosity. A part of the answer to this can be social reform. If we know what the puranas actually said and what they actually meant, we can make more informed decisions with regard to our religious and spiritual life.

Some people are not comfortable with recognising that ancient wisdom was science. They don't like taking the magic out of ancient science. Humans like miracles and magic. They entertain and reassure us. But I think the fact that we are all here at all is a miracle. The fact that we can speak and pray and dance is a miracle. All technology is a miracle. When Nature or Prakruthi is such a great miracle, why seek unnatural miracles?

Let us give the rshis of India their respectful and rightful dues as the original scientists of our human civilization and not just as philosophers.

Nakshatras

What are Nakshatras?

Posted by satyask on January 4, 2010

Reference : *History of Astronomy in India.* Indian National Science Academy.1985.

Chapter 9. Indian Calendar from Post-Vedic period to AD 1900. Page 274: S.K. Chatterjee and A.K. Chakravarthi.

What is the ediptic?

The ecliptic is the **apparent yearly path of the Sun seen from the earth on the background of the stars.**

What is the zodiac or rasi chakra?

The moon and planets are found within a belt of width eight degrees on either side of the ecliptic. This belt is known as the rasi chakra, or the zodiac.

What is a nakshatra?

To indicate day to day position of the moon in relation to the stars, the zodiac has been divided into 27 equal parts, from a fixed initial point in the ecliptic. Each part is known as a nakshatra or nakshatra division. and it covers 13 deg 20 min or 800 min of arc of the ecliptic.

Each Nakshatra division is named after a selected star which is generally prominent or traditionally well known and is broadly equally spaced in the zodiac. These identifying stars are called yogataras.



Lune

Not all Yogataras are located in the lune of the nakshatra division. for eg Ardra, Swati, Jyesta, Poorvashada, Uttarashada, Sravana and Dhanishta.

The word **Nakshatra** in the context of panchangas means the nakshatra division signified by that Nakshatra.

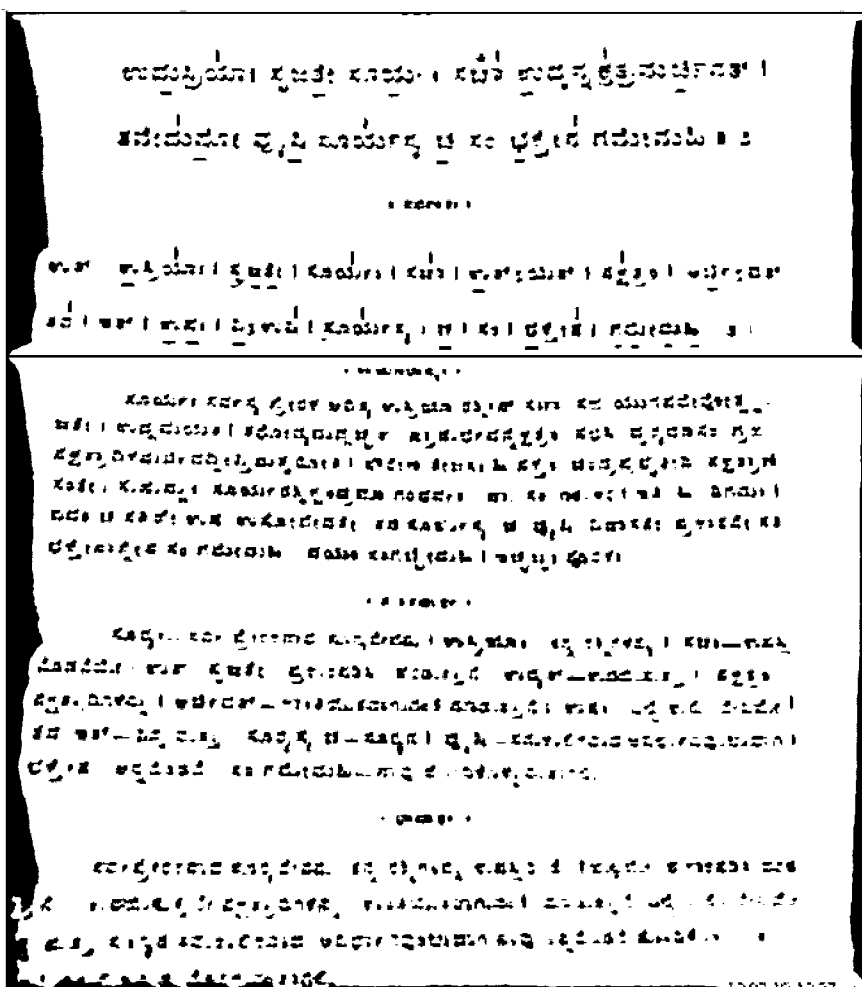
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Nakshatra refers to an area of the sky in the Vedas

Posted by [satyask](#) on March 12, 2010

The image below shows a Rg veda mantram of which [Vasishtha](#) is the [Rshi](#).

It explains how the sun (Suryah) on rising at dawn illuminates the nakshatras. Since the sun illuminates the sky and not constellations, as it rises, I believe this mantra supports the definition of nakshatra, as a region of the sky (lune) as given by Chatterjee and Chakravathy.in the previous section.



The translation of this Veda Mantra for which Vasishtha is the Rshi was done by H. P. Venkata Rao, based on sAyaNa bhAṣya.

I would like to draw attention to the idea that the Sun illuminates the nakshatras. If the meaning of nakshatras was constellations.. this would not be meaningful. However, nakshatras actually mean evenly distributed areas of the sky and the constellations kṛtika etc "own", "rule" or "mark" these areas by their proximity.

Please read : <http://oldthoughts.wordpress.com/2010/01/04/nakshatras/>

Nakshatra English Names

Posted by [satyask](#) on December 25, 2009

Some people believe that nakshatram is the same as a 'tara' or a star or sometimes a constellation. Not everyone agrees on the English names of all the nakshatras, so I am trying to collect them.

Source 1 and Source 2 were used to create the table below.

			Balakrishna (Source 2)	RAs'i
1	As'vini	Beta Arietis	13 α Aries / SAO-75151/HD-12929/Hamal.	mESa
2	bharaNi	35 Arietis	41-Aries/SAO-75596/HD-17573	mESa
3	kRttika	Eta Tauri	25hAries/SAO-76199/HD-23630/AlCyone.	$\frac{1}{4}$ (1 pAda) in mesa $\frac{3}{4}$ (3 pAdas) in vRSabha
4	rOhini	Aldebaran	87 α Tau/SAO-94027/HD -29139/Aldebaran	vRSabha
5	mRgas'ira	Lambda Orionis	112 β Tau /SAO-77168 /HD -35497/ <i>Elnath</i> .	2 pAdAs in vRSabha 2 pAdAs in mithuna
6	ARdra	Alpha Orionis	24 γ Gem/SAO-95912/HD47105/Arab 'Alhena'	mithuna
7	punarvasu	Beta Geminorium	78 β Gem/SAO-79666/HD-62509/'Pollux'	3 pAdAs in mithuna 1 pAda in karkAtaka
8	puSyA (tiSyA)	Delta Cancri	17 β Cnc/SAO-116569/HD-69267 Arab Al Tarf	karkAtaka
9	As'IESa	Alpha Hydroe	65 α Cnc/SAO 98267/HD 76756 <i>Asseleus Australis</i> .	karkAtaka
10	mAgha (makha)	Regulus	32 α Leo/SAO 98967/HD 87901/Regulus	simha
11	pUrvaphAlguNi (pubba)	Delta Leonis	SAO 99512/HD 97633 Arab Chort	simha
12	uttaraphAlguNi	Beta Leonis	94 β Leo/SAO 119076 /	1 pAda in

Ancient Indian Geo-Centric Astronomy – Connections to Scriptures, Astrology and History

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	(uttara)		HD 102870 Arab Zavijava	simha, 3 pAdAs in kanya
13	hasta	Delta Corvi	29 gVirgo identified as HD-110380, Arab Porrima	kanya
14	citra (citta)	Spica Virginis –Vegus	Spica	2 pAdAs in kanya 2 pAdAs in tula
15	swAti	Arcturus	SAO-139824/HD 124850 /99i Vir, Arab Syrma	tula
16	vis' Akha	Alpha Libroe	92a2Libra, SAO 158840 or HD 130481 Arab Zubenelgenubi	3 pAdAs in tula 1 pAda in vRs'cika
17	anUrAdha	Delta Scorio	7δ -Sco/SAO 184014/HD 143275. Arab <i>Dschubba</i> .	vRs'cika
18	jyESTa	Antares	21 α Sco/SAO 184415/HD 148478.	vRs'cika
19	MUla, (vicRta)	Lambda Scorio	42 q OPH from Ophichius zodiac OR Arab Sabik	dhanus
20	pUrvASaDa (aSADa)	Delta Sagittari	34α Sag, Arab name Nunki.	dhanus
21	UttarASADa (abhijit, aSADa)	Sigma sagittari	SAO-163422/163427 or HD -192876/192947. Arabs call this as <i>Geidi</i>	1 pAda in dhanus 3 pAdAs in makara
22	s'ravaNa (s'rONa)	Alpha Aquiloe	49δ -cap, SAO-164644 and HD-207098. Arab Deneb Al Geidi.	kumbha
23	dhaniSTa (s'raviSTa)	Beta Delphinum	55ζ SAO-146107 and HD-213051	2 pAdAs in kumbha
24	s'atabhiSa (s'atabhiSaja)	Lambda Aquarius	90φ Aqr, SAO-146595/SAO-146620, or HD-219449/HD219688.	kumbha
25	pUrvAbhAdra (prOSTapAda)	Alpha Pegasi	SAO128513/HD224617 /28ω Psc.	3 pAdAs in kumbha 1 pAda in mIna
26	uttarAbhAdra (prOSTapAda)	Gama Pegasi	3 δ Psc, SAO-189474/HD-4656.	mIna
27	rEvati	Zeta Piscum	99η Psc, SAO-92484 or HD-9270	mIna

Why do we use 27 nakshatrams when there are millions of stars?

The moon takes 27.32166 days to go around the earth. This is the sidereal month. It covers 1 nakshatram per solar day approximately. The moon functions as an astronomical day count clock in which Moon is the pointer and the stars are numerals in the sky pointed to by moon each day of the lunar month. (Balakrishna).

Nakshatram of the Day

Posted by [satyask](#) on August 26, 2009

The Vedic people used the moon as a pointer to the skies.

There are 27 Nakshatrams that cover 360 degrees of the zodiac, so each nakshatram 'covers' 13.33 degrees. The moon (Chandra) moves through each of these nakshatrams, once every month. Moving through means moving close to. The Yuga (Union) of Chandra and any Nakshatra roughly lasts for a solar day.

The Nakshatra Yuga at SunRise determines the Nakshatra of the day.

So at the time the sun is rising, the moon is within the 13 degrees of the Nakshatra of the Day!

The nakshatram of the day on the day of your birth is your janmanakshatram.

The rAs'i in which the moon is on that day is your janmarAs'i.

The rAs'i in the eastern horizon at the time of your birth is the janmalagna. The exact point on the eastern horizon at the time of your birth is your Lagna or Ascendant.

Some Background and Technical Terms. (kArte)

1. The **nakshatras** always appear to rise and set along the same celestial line or longitude. That is why they are called in general fixed stars.
2. Surya (The Sun) and Chandra (The Moon) do NOT rise and set along the same celestial line or longitude. The sunrise or moon-rise position, is to the north or south relative to the previous day.
3. The moon passes by every nakshatra once a lunar month and spends an average of one day close to any given nakshatra. **Each day is that named after a nakshatra.**
4. Similarly the sun passes by every nakshatra once a year and spends on an average one fortnight near any given nakshatram. **That fortnight is called the kArte of that nakshatram.**

Thus day-nakshatra names depend on the longitude of the moon, fortnight karte names depend on the longitude of the sun. The names of the lunar months depend on the longitude of the full moon. Each lunar month is named after that nakshatram on which the full

moon day (pournami) day occurs. Since the full moon depends on the relative angular separation of the sun and the moon and the nakshatram depends on the moon and the nakshatrams, they never match exactly. ***So we take the nakshatram that most frequently occurs near the full moon and name the lunar month after that.***

Masas

What is a Masa (month)?

Why we have 30 days to a lunar month : The time between two successive full moons is 29.53059 solar days, which can be approximated to 30 solar days. The size of fractional moon exposure to sun can indicate a day count and is defined as a moon day or *tithi*. Thirty *tithi*'s are defined in a lunar month, each *tithi* being smaller than a solar day. Fifteen are identified as *Shukla paksha* or ascending fortnight and next fifteen are called *krishna paksha* or descending fortnight.

Why we use 27 nakshatras : The moon takes 27.32166 days to go around the earth. This is the sidereal month. It covers 1 nakshatram per solar day approximately. The moon functions as an astronomical day count clock in which Moon is the pointer and the stars are numerals in the sky pointed to by moon each day of the lunar month.

The reason for time between full moons being higher than sidereal month is because, the moon has to go around the earth by more than a revolution (nearly 390 degrees) to keep with earth which moves forward in its trajectory around sun.

Lunar Month : "Though the lunar time between two successive full moons is 29.53059 solar days, the time taken for moon to go round the earth (sidereal month) is 27.32166 days. Moon also has an oscillatory motion crossing the ecliptic. The moon anomalistic motion and nodal motion have periods are 27.55545 and 27.21222 days for a revolution around earth. The *Chandramaana* lunar calendar system keeps a natural cyclic count of days using both Moon based properties

How we got the names of the months: "The twelve months were named after the stars at which full moon occurs and these are *Chaitra, Vaishakha, Jyeshtha, Ashaada, Sharavana, Bhadrapada, Ashwija, Kaartika, Margashira, Pushya, Maagha, Phalguna.*"

Tamil and Hindi Calendar Month Name Variations with Sanskrit (Telugu) Month Names

Posted by [satyask](#) on November 28, 2009

Tamil and Telugu (sanskrit) :

There are 2 levels of matching required.. one is with names and one is with dates.

- Maarkazi Margasira
- thai Pushya – Tishya
- maachi (Maasi) Magha
- pangkuni Phalguni
- chiththirai Chitra
- vaikaachi Vaisakha
- aani Jyeshtha
- aadi Aashada
- aavaNi Sravana
- purattaac Bhadrapada
- aippachi Aswiyuja
- kaarththikai Karthika

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1. Jan 7th 2009 was accepted as Vaikuntha Ekadasi both in the Tamil and the Telugu calendars, but the Telugu Calendars called it Pushya Suddha Ekadasi and the Tamil Calendars called the same day as Margasira (Markazi) Suddha Ekadasi.
2. Jan 26th 2009 was Pushya Amavasya in the telugu calendar, Jan 25th was Thai Amavasya in the Tamil calendar – so you might hope for a match.
3. But Feb 9th is Magha Pournami in the Telugu Calendar and feb 8th is Thai (Pushya) Poosam (Pournami) in the Tamil Calendar.
4. Telugu months start with the first day after the new moon, so in any lunar month, the pournami comes first and then the amavasya. In Tamil month reckoning, it appears as if the amavasya occurs first and then the pournami, *but this observation needs verification.*
5. ***Feb 23rd 2009 was MahaSivarathri in both calendars, but Telugu people will tell you that it is Magha Bahula (Krishnapaksha) Chaturdasi and Tamilians will tell you that it is Thai (Pushya) Krishnapaksha Chaturdasi.***
6. So Telugu month-names “occur” before the corresponding Tamil month names.
7. The first day of Chaitra Masam as per telugu/kannada people was 27th March 2009. This was our New Year Day. The first day of Chittirai (Chaitra), as per Tamilians was 14th April 2009.
8. 27th march 2009 was Chandramana Ugadi (Lunar New Year), 14th April 2009 was Saura Samvatsaradi (Solar New Year).
9. What was Vaisakha Pournami to telugu people was Chaitra Pournami to Tamilians – May 9th 2009.

And so on...

Hindi And Telugu (Sanskrit Names) :

The Hindi month names are variants of the sanskrit (telugu) names. For eg Pushya Masam in Sanskrit (telugu) becomes Posh in Hindi.

Jan 11th 2009 was Pushya Pournima (Posh Pournima) in both Hindi and telugu calendars. But Jan 12th 2009 was Pushya Krishna Paksha Padyami in Telugu Calendars and it was Magha Krishna Paksha Dwitiya in the Hindi calendar. Hindi months of the same name variants start a fortnight earlier than telugu (sanskrit) months. There is no mention of Vaikuntha Ekadasi in the Hindi calendar I referenced.

Feb 23rd 2009 was Mahashivarathri even in in the Hindi calendar but, it was called Phalguna Krishna Dwadasi in the Hindi Calendar, Magha Bahula (Krishnapaksha) Chaturdasi in the telugu calendar, Thai (Pushya) Krishnapaksha Chaturdasi in the Tamil Calendar.

In the Hindi Calendar, Chaitra Masam started on 12th March 2009. 11th March was celebrated as Holi or Phalguna Pournami. Telugu (Sanskrit) and Hindi calendars agree on month names only in the Suklapaksha (the fortnight preceding pournami). So Holi is in a sense a year-end festival, because it ends Hemanta, the season after winter and before spring. *The Hindi New Year has been given in the reference as March 27th 2009, Chaitra Sukla Paksha PratiPada (Padyami), as it is for the Telugu and Kannada people.*

References:

For the tamil calendar I used : <http://www.panchangam.com/fest.htm>

and for the Hindi I used this : <http://www.festivalsofindia.in/calender/jan.asp>

For the telugu calendar I used the one created by the Sringeri Samstha.

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Rasis

English Names of rAs'Is

Even though I have given a name correspondence below, you must be cautious. In the sky the starting point of what Hindus call mesha and what westerners call Aries are not necessarily the same.

Mesha	Aries
Vrishabha	Taurus
Mithuna	Gemini
Karkataka	Cancer
Simha	Leo
Kanya	Virgo
Tula	Libra
Vrishchika	Scorpio
Dhanu	Sagitarrius
Makara	Capricorn
Kumbha	Aquarius
Meena	Pisces

Rasis were mentioned in the Balakanda of Valmiki Ramayanam to describe the time of Sri Rama's birth and were also explained in Parasara's Hora Sastra. It is likely that zodiac names travelled from India to Greece.

- Given the closeness in **meaning** of Rasi Names in Sanskrit and Greek. (*This suggests interaction*)
- Given the Date of the Bharata war and the Date of Sri Rama (*These happened first*)

Grahas

Graha means gravitational body not Planet.

Posted by [satyask](#) on May 14, 2009

Graha means to hold. The Indian word loosely translated as planet is Graha. It is suggestive of **grav**-itation.

The word 'planet' itself is derived from the word 'wanderer' (unlike the fixed stars).

That is why Surya and Chandra are also "grahas". It is also why Rahu and Ketu are called Chaya (Shadow) Grahas.

The word Graha is used from the earliest days in Indian Texts.

The nine grahas are Surya (Sun), Chandra (Moon), Kuja (Mars), Budha (Mercury), Guru (Jupiter), Sukra (Venus), Sani (Saturn), Rahu and Ketu.

It is wrong to translate the word graha as a planet and then to be critical of calling Surya and Chandra as grahas. **The error is not in our astronomy.** The error is in the translation from Sanskrit to English and other languages.

Parents of the navagrahas..

Posted by [satyask](#) on March 17, 2010

Grahas : "The **Grahas** referred to in **The Vedas** are Surya, Chandra, Brihaspati, Shukra, Budha, Shani, Kuja, Rahu, Ketu. The Vedas extensively refer to Nakshatra month names and moon pointing at different Nakshatra's for various purposes. The European view (originally from Chaldian and Kassarian cultures of Middle East and from Egypt), propagated by Greek philosophers, of the night sky and the star system ran in a different direction in ancient times in that Sun was considered as the pointer to skies. In contrast, the moon is considered to be the primary pointer from vedic astronomical point of view."

- Surya's parents are **Aditi and Kasappa**, the son of Marichi and grandson of **Brahma**.
- Surya and Sandhya/Chaya are the parents of Sani
- Atri and Anasuya are the parents of Chandra. (See Also : **Chandra Deva, Atri's son and Indra's Uncle**)

- Chandra and Tara are the parents of Budha.
- Kuja is the son of **Siva** and Bhumi.
- Brihaspati is the son of Angirasa and grandson of Brahma
- **Sukra** is the son of **Bhrigu** and grandson of Brahma.

Maya is also said to be the son of Vipracitti and Simhika and a brother of Rahu. Simhika is said to be a chaya grahi rakshasi or a rakshasi who catches shadows. She tried to prevent Hanuman from reaching Sri Lanka. This is all the more interesting since Rahu is a chaya graha or a shadow graha. As the author of Surya Siddhantam, Maya described how eclipses were caused.. and it had nothing to do with anyone swallowing the sun!! Ketu is a "clone" of Rahu...

Varas : Days of the week are named after grahas.

Varas were in use at the time of Janamejaya's Rule. See Janamejaya's Dana Sasana Patram. They are also mentioned in the balakAnDa of the valmiki rAmAyaNa. They are still in use today.

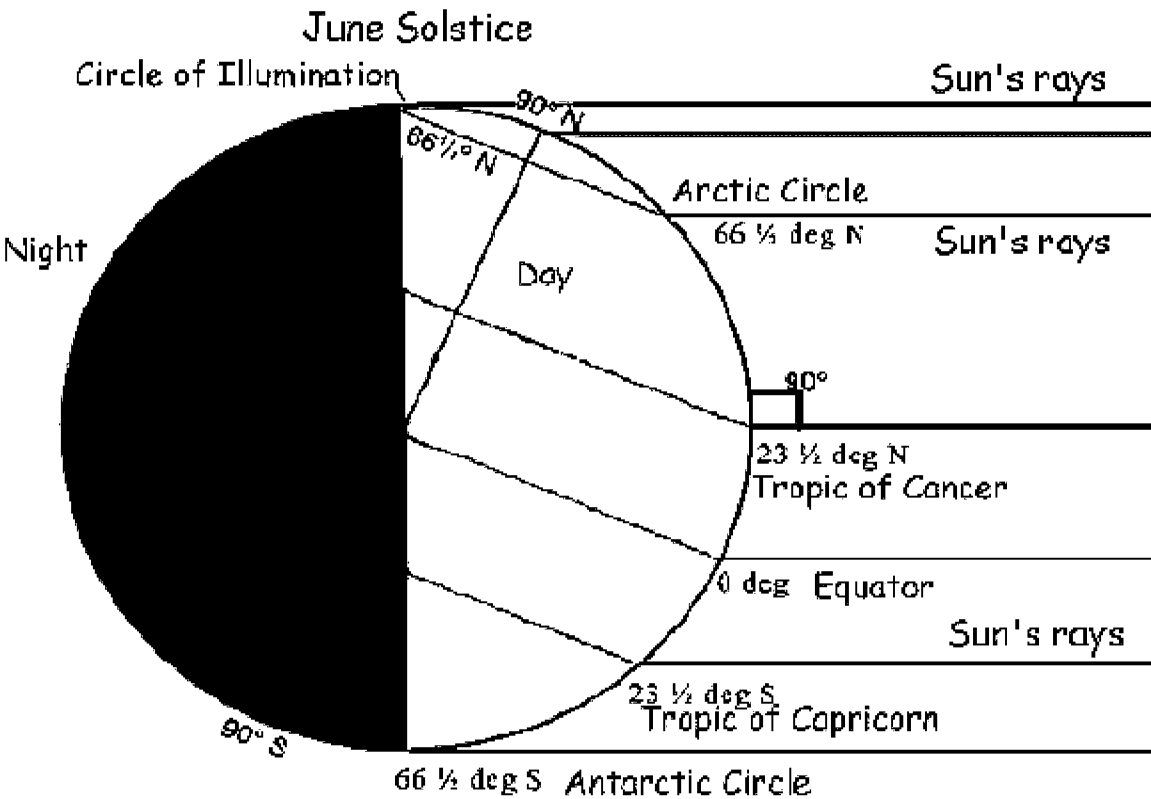
Ravivar	Sunday	Sun
Induvasar or Somavar	Monday	Moon
Bhomyavasara or Mangalvar	Tuesday	Mars
Sowmyavasara or Budhavar	Wednesday	Mercury
Brihaspativasara or Guruvar	Thursday	Jupiter
Bhargava vasara or Shukravar	Friday	Venus
Sthiravasara or Shanivar	Saturday	Saturn

Uccha, Neecha, Exaltation, Debilitation and Declination

Posted by [satvask](#) on September 7, 2009

Let us continue with our study of geo-centric or “observable” or ancient Indian astronomy.

Zero Length Shadows : To cast a zero length shadow the Sun or Moon must be exactly overhead. This can happen only at noon, but not every where, on everyday of the year. Please Read : <http://daphne.palomar.edu/jthorngren/tutorial.htm> for a very clear and basic explanation. Beyond the tropic of cancer and the tropic of capricorn, towards the poles, the sun is never directly overhead. When the sun is directly overhead at the tropic of cancer, the sun is at a 66.5 degree angle at the equator. At the North Pole on the summer solstice, the sun circles around all day 23.5 degrees above the horizon.



<http://daphne.palomar.edu/jthorngren/tutorial.htm>

When we talk of declination of a graha, we are talking of its angle above the horizon. A graha is exalted, when it’s angle is as great as possible and it is debilitated when it’s angle is as small as possible. We always think of the Northern Hemisphere with respect to Ancient Indian Astronomy.

Source :

Graha	Uccha Rashi	Neecha Rashi
Surya (Sun)	Mesha (Aries)	Thulam

Chandra (Moon)	Vrishabha (Taurus)	Vrischika
Mangal (Mars)	Makara (Capricorn)	Kartakam
Budha (Mercury)	Kanya (Virgo)	Meena
Guru (Jupiter)	Kartakam (Cancer)	Makara
Shukra (Venus)	Meena (Piesces)	Kanya
Shani (Saturn)	Thulam (Libra)	Mesha
Rahu (Moon's Node : Dragon's head)	Vrishabha (Taurus)	Vrischika
Ketu (Dragon's tail)	Vrischika (Scorpio)	Vrishabha

The Sun is exalted in Mesha., therefore we are talking about the Spring Equinox, when the equator gets the direct rays of the sun at noon.

Therefore, the points of exaltation described below are with respect to the equator and not with respect to say, Ayodhya.

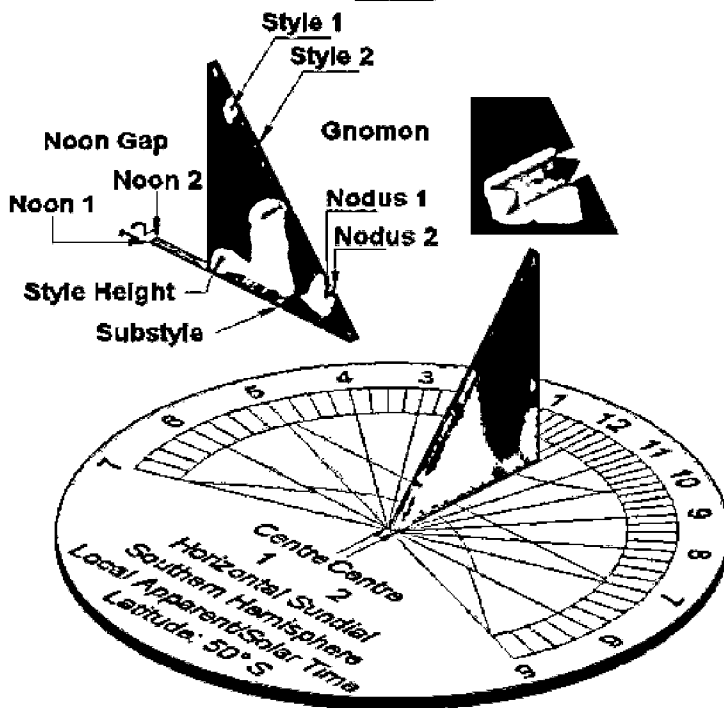
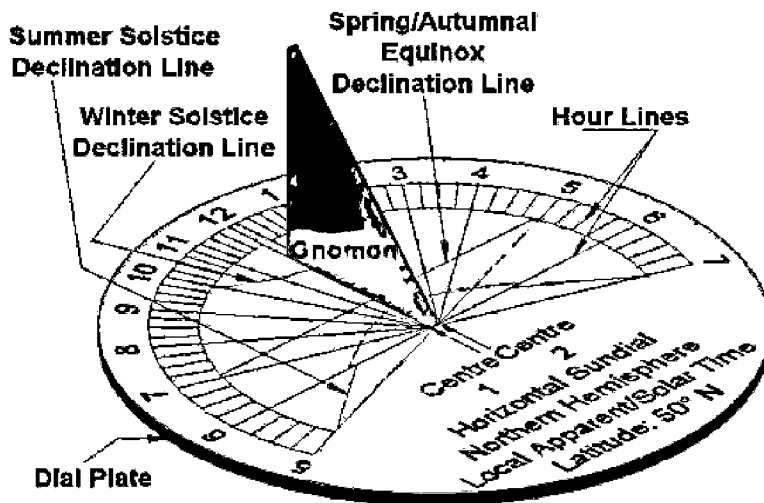
Astrologically speaking, a graha is most powerful when it reaches its degree of exaltation.

Precession of Equinoxes means Precession of Exaltation :

- *If the Spring Equinox shifted Kritika Nakshatram to Ashwini Nakshatram, then the Sun's Exaltation point as observed at the equator also shifted from Kritika Nakshatram to Ashwini Nakshatram.*
- *If at one point, the Sun was Exalted (Equator) in Revathi, that means that particular spring equinox occurred approx 26000 years ago.*

Nakshatra of Sun's Exaltation varies with the earth's latitude :

- *Today, if I SEE that the sun is exalted in Mesha Rasi, Ashwini Nakshatram, then I may be sitting on the equator.*
- *Today, if I SEE that the sun is exalted in Karkata Rasi, Punarvasu Nakshatram, then I may have in mind, a place on the tropic of cancer.*
- *Today, if I SEE that the sun is exalted in Makara Rasi, Dhanishta Nakshatram, then I may be sitting on the tropic of capricorn.*



What is the difference between a graha yoga (conjunction) and a yuga?

Posted by [satyask](#) on September 4, 2009

First, take a *geo centric point of view*. Then imagine that you are in the northern hemisphere. (Somewhere near Ujjain is better).

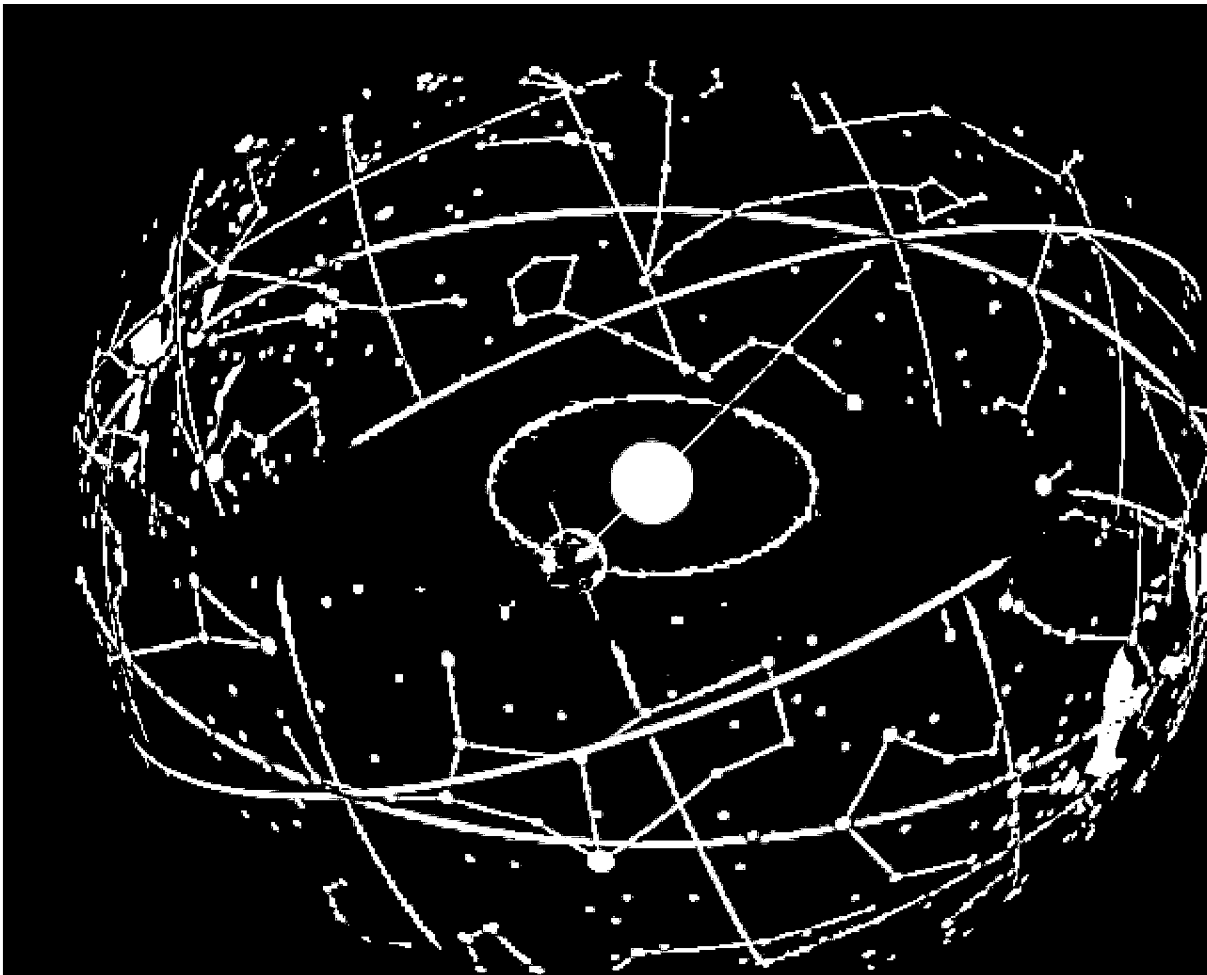
Then recognise *that different celestial bodies are at different distances*.

Ancient Indian Geo-Centric Astronomy – Connections to Scriptures, Astrology and History

Satya Sarada Kandula

Know that the earth's spin makes all celestial bodies appear to rise in the east and set in the west.

Know that the nakshatras always appear to rise and set along the same celestial line or longitude.



By Tau'olunga : <http://commons.wikimedia.org/wiki/User:Tau%CA%BBolunga>

That is why they are called in general fixed stars.

Know that the Devas/Grahas – Surya (Sun), Chandra (Moon), Kuja (Mars), Budha (Mercury), Guru (Jupiter), Sukra (Venus), Sani (Saturn) do NOT rise and set along the same celestial line or longitude. The sunrise/other graha-rise position, is to the north or south relative to the previous day.

Observe that, there is a northern-most and a southern-most point for the sun/graha rises and sets.

Observe that all grahas have an uttarayanam when they tend north and on average and dakshinayanam when they tend south on an average. Observe that some times a graha-rise can temporarily shift south during an **uttarayanam** and or shift west during a **dakshinayanam**. **That is called a Vakra or a retrograde movement.**

This entire effect is caused by

- *the tilt of the earth's axis to the orbital plane. The earth's equatorial plane (the horizon as we observe it) is at 23.5 deg to the orbital plane. (The tilt increases as the earth slows down with age).*

- *a geo-centric view of the movements.. or observable movements.*

Graha Yogas and Nakshatra Yugas : In their north-south movements, grahas can pass by each other.

The moon passes by every nakshatra and every other graha once a month.

- *So a Chandra Nakshatra Yuga : for eg Chandra Dhanista Yuga occurs once a month.*
- *And a Chandra-Other Graha Yoga (Conjunction) eg Chandra Sukra Yoga also occurs once a month.*

Surya passes by every every nakshatra and every other graha once a year. Therefore the Surya Nakshatra Yugas take place once a year and the Surya-Other Graha Yogas occur approximately once a year (*not taking graha vakras into account*).

- The Surya Chandra Yoga occurs every month and we know it as Amavasya or New Moon Day.
- On an average the Surya Sani Yoga occurs once in 30 years and the Guru Aditya(Sun) Yoga occurs once in 12 years. (Since the average geo-centric periods of Sani and Guru are 30 and 12 years respectively).
- But for it to be a YUGA, a nakshatra must be involved. So a Guru, Aditya, Dhanishta Nakshatra alignment is called a Yugadi and the yuga duration is 12 years, the Kumbha Mela duration.
- The Surya, Chandra, Dhanishta Yuga is the Pitamaha yuga and it is 5 years long.
- The Surya, Chandra, Dhanishta, Sani Yuga is 30 years long. (Not used much).
- The Surya, Chandra, Dhanishta, Guru Yuga is the Barhaspatya Yuga and it is 60 years long.
- The Surya, Chandra, Dhanishta, Guru, Sani Yuga is also 60 years long.

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*Further Reading/ Future Reference/ I am yet to read
it : <http://ees2.geo.rpi.edu/geo2/Homework/HW1solar.pdf>*

Measuring distances in degrees in the sky using your hand

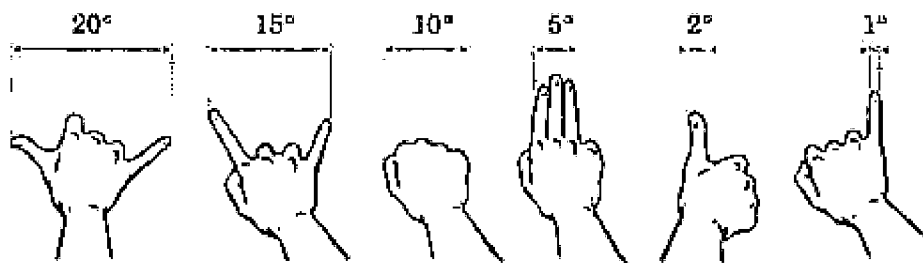
Posted by [satvask](#) on October 28, 2009

(Arm Stretched)

Source : <http://books.google.co.in/books?id=fU1VpG1tT9AC&lpg=PP1&ots=9qD8Wcw4bb&dq=a%20walk%20through%20the%20heavens%20-%20heifetz&pg=PA4#v=onepage&q=&f=false>



Fig.3



Rtus (Ruthus, Rithus), Seasons

Rtus (Ruthus, Rithus)

What are the names of the Vedic seasons: The six-season definition is unique to vedic system and is not found in any other recorded culture or system. These seasons are, Vasanta, Geeshma, Varsha, Sharad, Himavanta and Shishira each season being about two moon cycles.

Seasonal Connections with Lunar Months tend to be not very accurate – making corrections necessary every 3 and 5 years. In Bangalore, summer starts in March itself.

- CHAITRA MASA – VASANTHA RUTHU (Spring)
- VAISHAKA MASA – VASANTHA RUTHU
- JYESHTA MASA – GREESHMA RUTHU (Summer)
- ASHADA MASA – GREESHMA RUTHU
- SHRAVANA MASA – VARSHA RUTHU (Rainy)
- BHADRAPADA MASA – VARSHA RUTHU
- ASHWAYUJA MASA – SHARAD RUTHU (Autumn)
- KARTHIKA MASA – SHARAD RUTHU
- MARGASHIRA MASA – HEMANTA RUTHU (end of 'gold' – golden skies? or end of ice? – Himantha)
- PUSHYA MASA – HEMANTA RUTHU
- MAGHA MASA – SHISHIRA RUTHU (cold – winter -?)
- PALGUNA MASA – SHISHIRA RUTHU

Masas and Rtus Names from the Linga Puranam

- *I have not yet worked out the astronomical significance of this passage., I am saving it for our reference. For example, there is an Aditya per month, and Vivasvan is the Aditya for the second month of the Sarad Rtu.*
- *I don't know why the seasons are listed from grishma and not from vasanta*
- *Therefore I don't know if I can map the name Chaitra Masa as used today to Tapa Masa as given in the Linga Puranam.*
- *I feel somehow that Chaitra Masam should match Madhumasam., because of the meaning of madhu – sweet, honey.*
- *One more area for research, interpretation and reconciliation.*

Source and Reference :

1. The sun's chariot was built by Brahma himself. It is made completely out of gold. (*I know a shloka where it is said to be made out of iron, but don't remember which text that is from at this time*)
2. There are **twelve months in a year**. Their names are Madhu, Madhava, Shukra, Shuchi, Nabha, Nabhasya, Isha, Urjja, Saha, Sahasya, Tapa and Tapasya. (These names of the months are slightly unusual. More common is Vaishakha, Jyeshtha, etc.)
3. Two months constitute a season (ritu) and there are therefore six seasons in every year. These are grishma (summer), varsha (monsoon), sharat (early autumn), hemanta (late autumn), shita (winter) and vasanta (spring).
4. In every season, two **adityas**, two rshis, two **gandharvas**, two apsaras, two **rakshasas** and two **nagas** ride on the sun's chariot to keep the sun company. Their names are as follows.

1. **Grishma** – the adityas Dhata and Aryama; the sages Pulastya and Pulaha; the gandharvas Tumburu and **Narada**; the apsaras Kritasthala and Punjikasthala; the rakshasas Rakshoheti and Praheti; and the nagas Uruga and Vasuki. Madhu and Madhava are the months of grishma.
2. **Varsha** - the adityas Mitra and Varuna; the sages Atri and **Vasishta**; the gandharvas **Haha and Huhu**; the apsaras Menaka and Sahajanya; the rakshasas Pourusheya and Vadha; and the naga Takshaka. (The name of the second naga is not given.) Shukra and Shuchi are those of varsha.
3. **Sharat** – the adityas **Indra** and Vivasvana; the sages Angira and **Bhrigu**; the gandharvas Vishvasu and Ugrasena; the apsaras Pramlocha and Anumlocha; the rakshasas Sarpa and Vyaghra; and the nagas Elapatra and Shankhapala. Nabha and Nabhasya those of sharat.
4. **Hemanta** - the adityas Parjanya and Pusha; the sages **Bharadvaja** and **Gautama**; the gandharvas Suruchi and Parvasu; the apsaras Ghrithi and Vishvachi; the rakshasas Apa and Vata; and the nagas Dhananjaya and Iravana. Isha and Urjja those of hemanta.
5. **Shita** – the adityas Amshu and Bhaga; the sages **Kashyapa** and Kratu; the gandharvas Chitrasthala and Urnu; the apsaras Urvashi and Purvachitti; the rakshasas Vidyut and Diva; and the nagas Mahapadma and Karkataka. Saha and Sahasya those of shita.
6. **Vasanta** – the adityas Tvashta and Vishnu; the sages Jamadagni and **Vishvamitra**; the gandharvas Dhritarashtra and Suryavarcha; the apsaras Tilottama and Rambha; the rakshasas Brahmopeta and Yakshopeta; and the nagas Kambana and Ashvatara. Tapa and Tapasya those of vasanta.
5. The moon (Chandra) **has a chariot that has three wheels and is drawn by three horses**. The horses are completely white in colour. The sun drinks up the energy of the moon for a period of fifteen days. This period is known as krishnapaksha (the fortnight during which the moon wanes). The sun then replenishes the moon's energy over the next fifteen days. This period is known as shuklapaksha (the fortnight during which the moon waxes).
6. Budha (Mercury) is Chandra's son and **rides a chariot that is drawn by eight horses**. The horses are yellow and the chariot is made of gold.
7. Brihaspati (Jupiter) also has a chariot that is made of gold and is drawn **by eight horses**.
8. But Shani's (Saturn) chariot is made of iron.
9. Just as Indra rules over the gods, the sun rules over the planets and the **moon rules over the nakshatras (stars) and the herbs**.

But all of these revolve around Dhruva (the Pole Star).

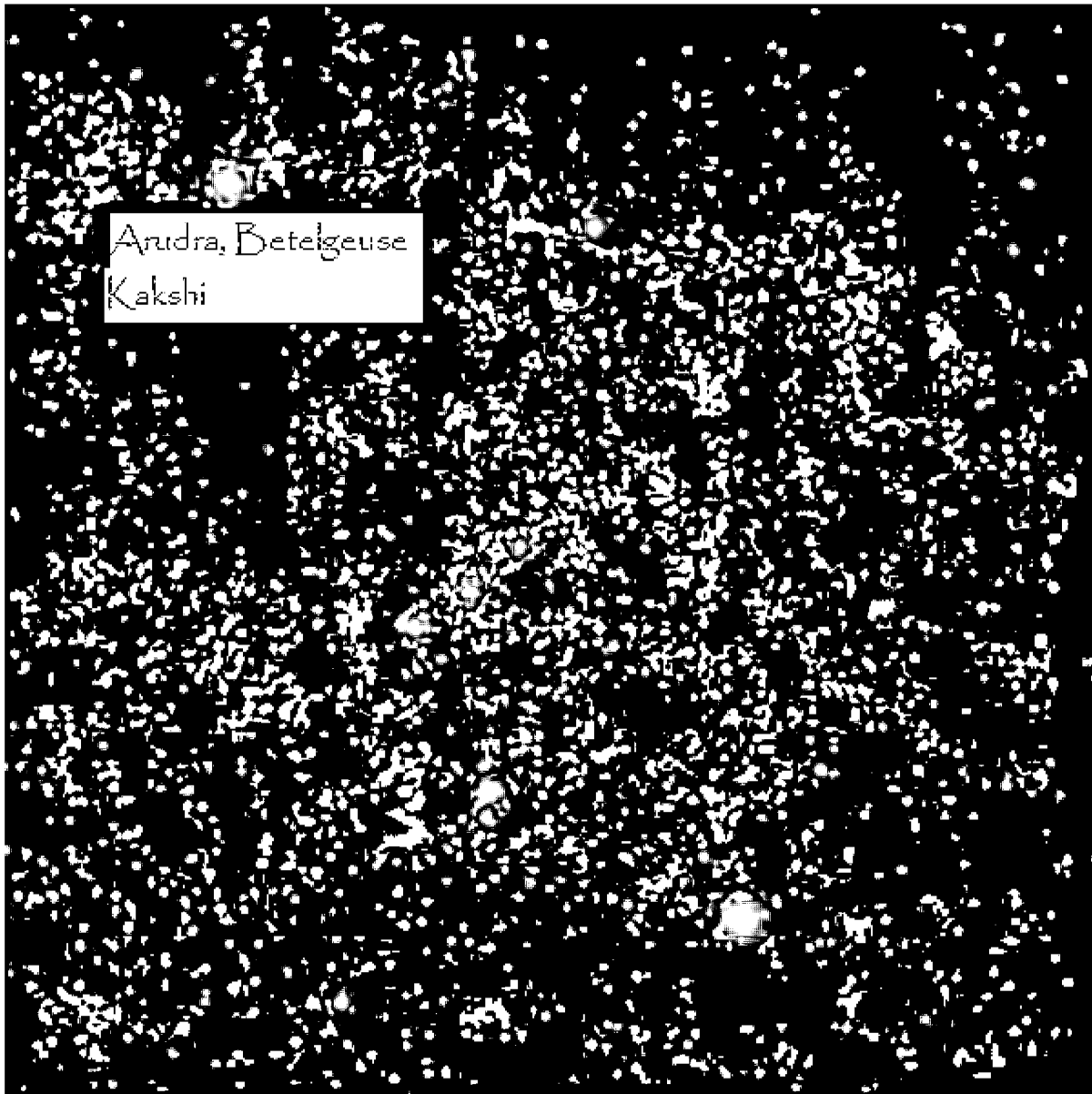
More On Naksatras

Identifying Nakshatras - Betelguese, Arudra in Orion; Aldeberan, Rohini in Taurus; Mrigasira and Krutika; Punarvasu, Pollux in Gemini ; Brahma, Auriga

Posted by [satyask](#) on December 6, 2009

Identifying Nakshatras – Betelguese, Arudra in Orion

1. Stand such that Orion's Belt is tilted up to your right as in the image below.
2. Then look for the reddish star, to your top left, in the constellation.
3. Now you are all set for Arudra Darsanam.

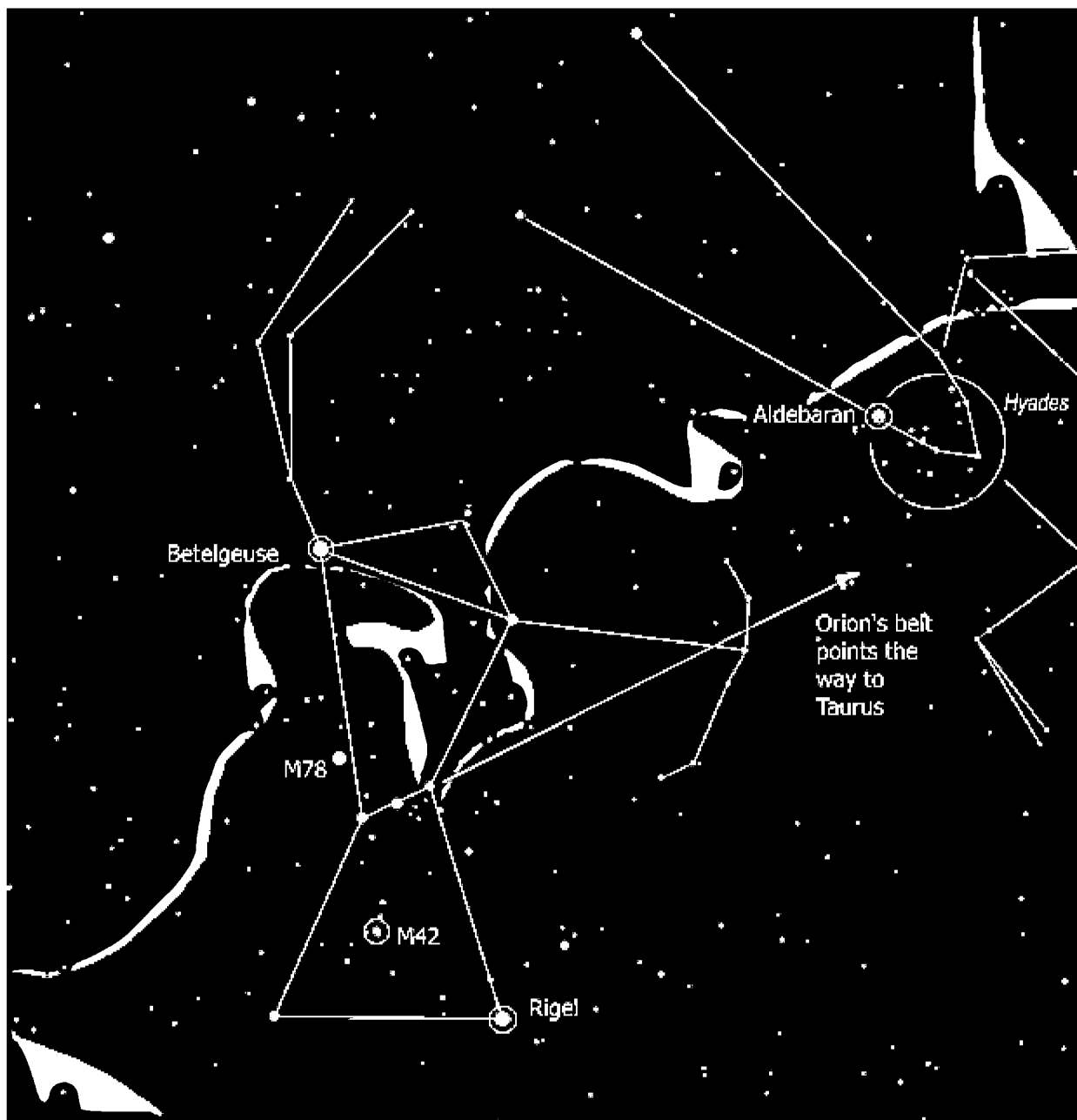


Locate Arudra, Betelgeuse within Orion

Aardharaa	1	Rudra / Rahu	Siva	Mithuna	Points to centre of universe?	As per Dr. Balakrisgna, Arab 'Alhena' is the best candidate for <i>Aardhra</i> . It is 68 minutes or 17 degrees (E-W) away from <i>Mrigashiras</i> . It is 2 diameters out of moon traverse band.
=====						
=====						

Identifying Nakshatras – Aldeberan, Rohini in Taurus

1. Orion’s belt will point you to Taurus
2. Rohini is Sri Krishna’s Janma Nakshatram
3. Rohini is also the name of Baladeva’s mother.
4. Rohini Nakshttram, is a daughter of **Dakhsa** and is the favorite wife of Chandra.

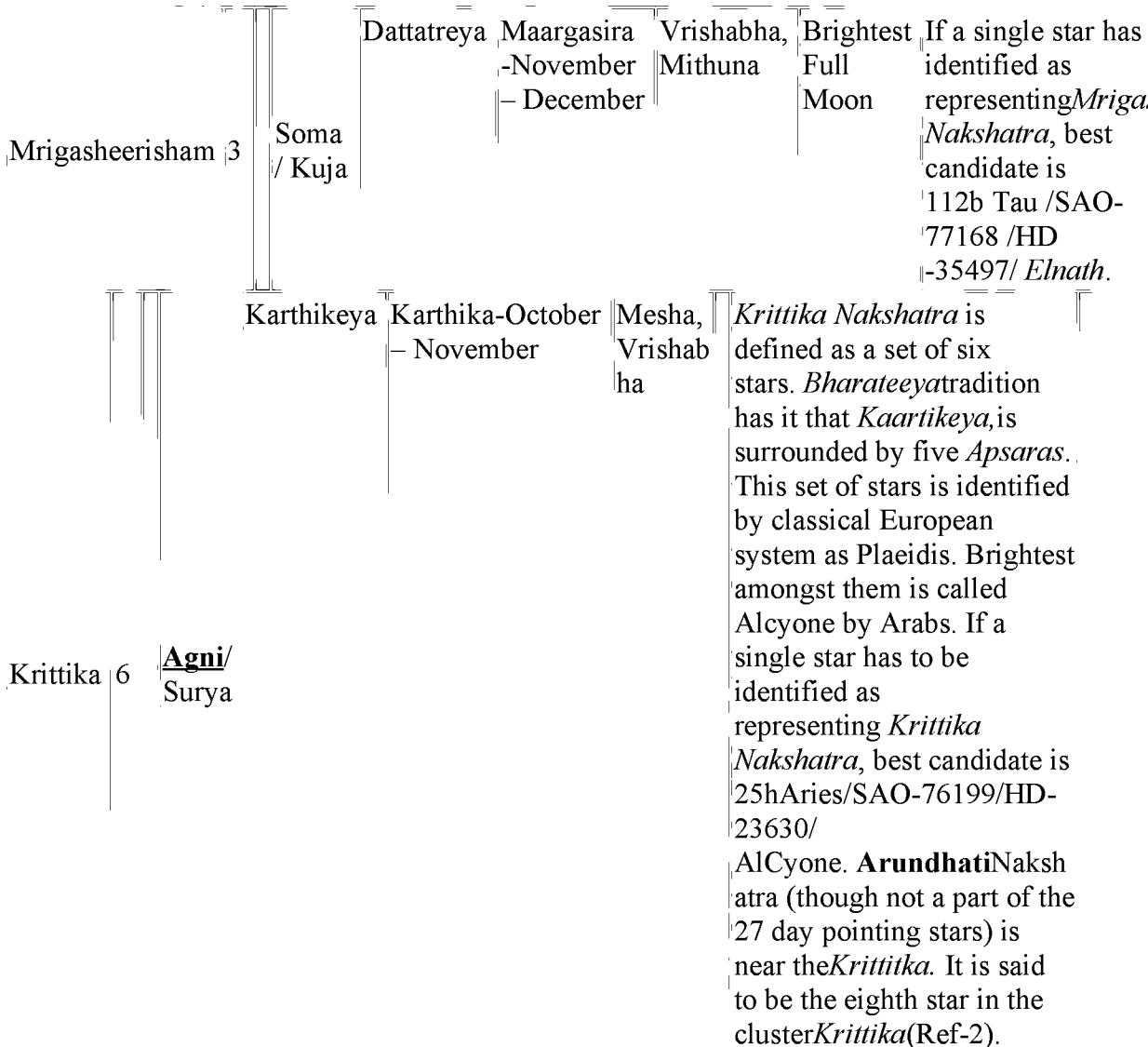


		Krishna	Vrishabha	Brightest Star	<i>Rohini</i> is the brightest of the 27 Stars used for <i>Bharateeya Nakshatra</i> system of names, with a brightness of 0.85. <i>Rohini</i> is identified as birth star of Sri krishna. The distance between <i>Krittika</i> and <i>Rohini</i> is about 12.5 degrees (E-W). If a single star has to be identified as representing <i>Rohini Nakshatra</i> ,
Rohini	5	Prajaapati / Chandra			

best candidate is 87aTau/SAO-94027/HD -29139/ Aldebaran

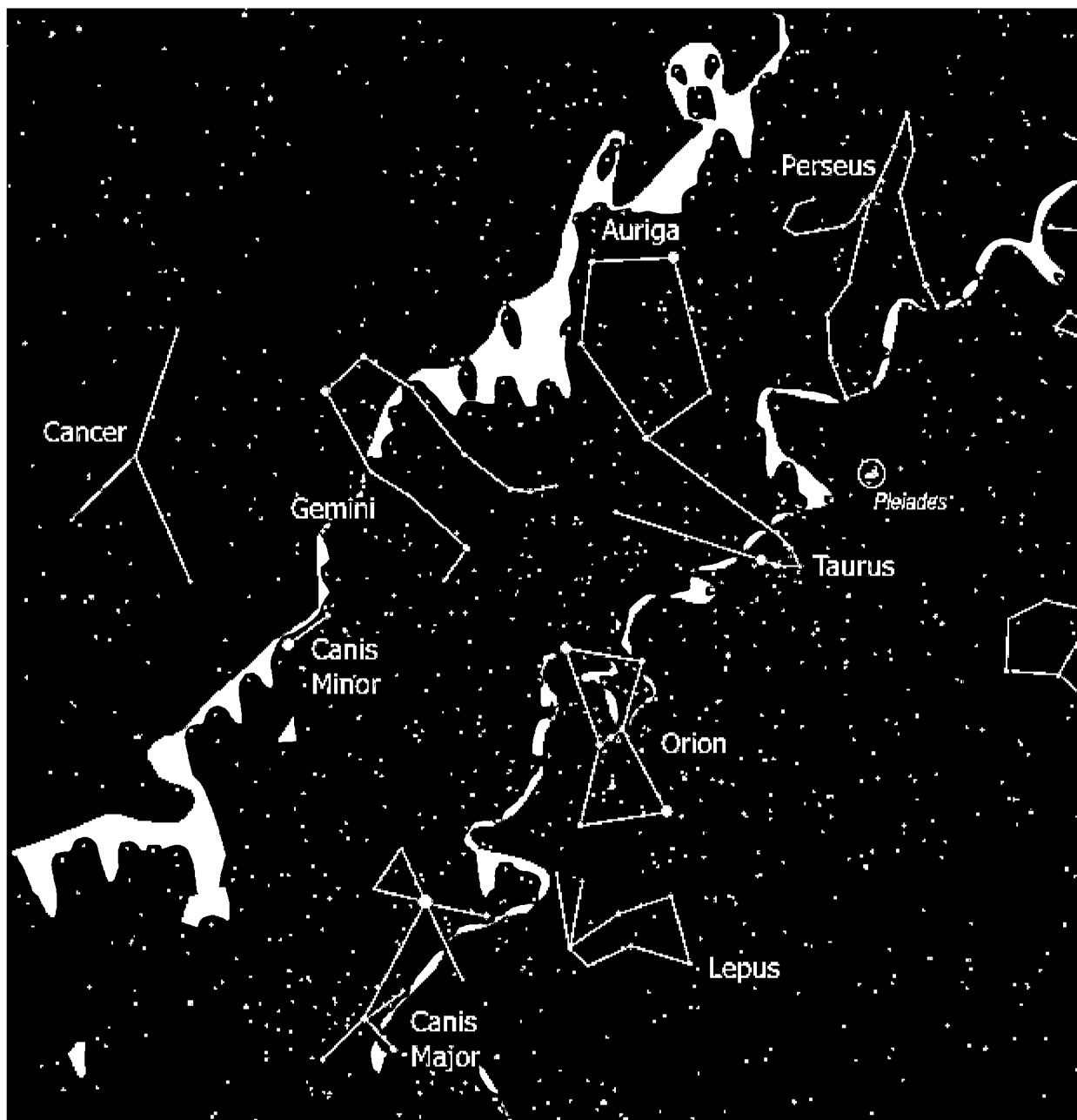
Identifying Nakshatras – Pleiades, Kruthika and Mrugasheersham

1. In the same map, above you can see Kruthika Nakshatram, labelled as Pleiades.
2. There is a small group of 3 stars very close to Betelgeuse marked on the map above. That is Mrigasira.
3. You can imagine an arc of a circle passing through, Arudra, Mrigasira, Rohini and Krittika.



Identifying Nakshatras – Punarvasu, Pollux, in Gemini

1. In the map below, look perpendicular to Orion's belt through betelgeuse to find gemini.
2. Pollux, Punarvasu is in the upper-left corner of Gemini.

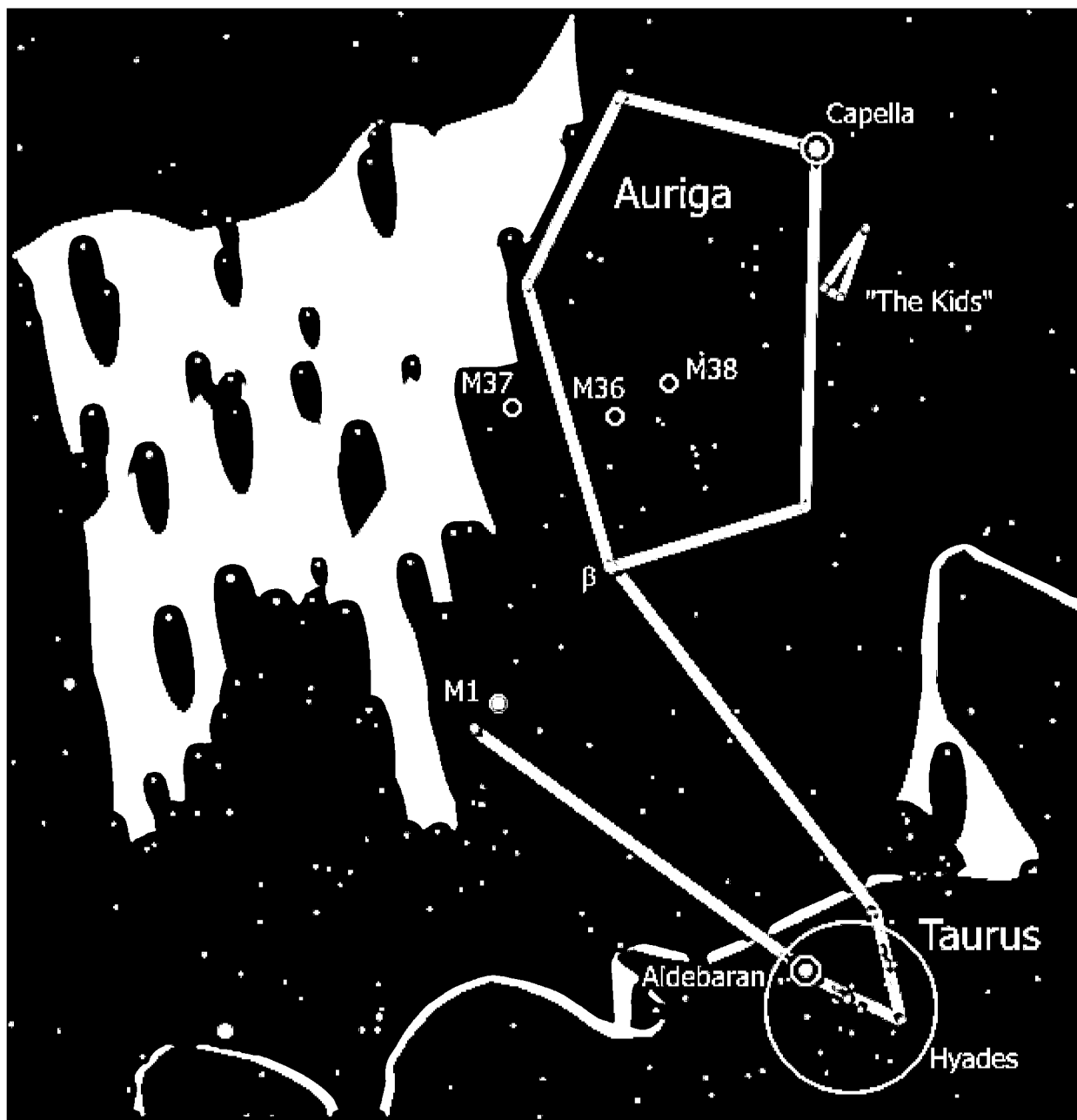


<p>Punarvasu 2-4</p> <p>Aditi/Guru</p>	<p>Sri Rama's janmanakshatramChaitra masa Punarvasu nakshatram was the day on which Dasaratha made the decision regarding Sri Rama's coronation – Valmiki Ramatanam – Ayodhyakanda.</p>	<p>Mithuna, Very Karkatak Bright 'a Star</p>	<p>If a single star has to be identified as Punarvasu, then 78b Gem/SAO-79666/HD-62509/'Pollux' is the best candidate for Punarvasu. It is</p>
--	---	--	--

a very bright
star of +1.15
brightness.

Identifying Auriga – Five Faced Brahma :

1. Take the limb of Taurus that does not have Rohini in it.
2. The star “beta”, common to Auriga and Taurus in the drawing below, is the one called El Nath.
3. Arudra, El Nath and Capella are on a line.
4. That will point you to the 5 sided pentagon, the Auriga.
5. Auriga has been identified as Brahma by Bapu Dev Sastri who translated the Surya Siddhantam.
6. Do you remember the story where Siva knocked of the 5th head of Brahma which was on the top?
7. That story is connected to this constellation. Capella sounds like Kapala (*Skull in Sanskrit*) does it not?

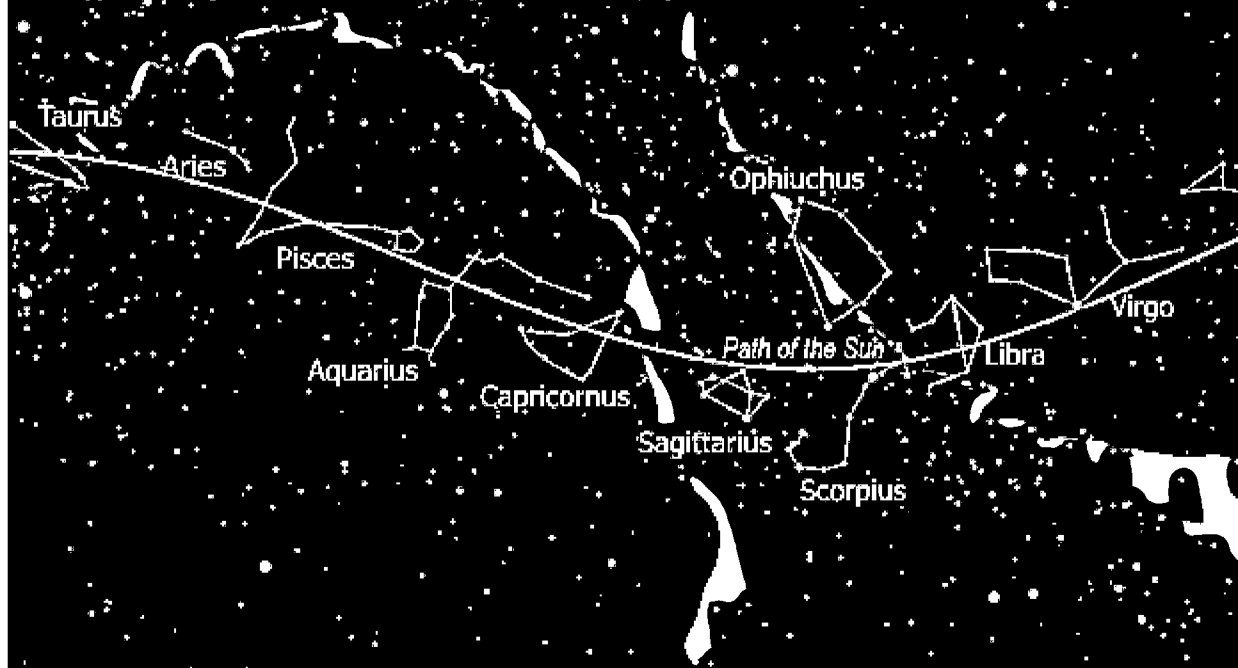


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Constellations of the Zodiac



Moola Nakshatram

"*Moola* or *Vichruta* has been extensively referred to in *Atharveda Kaanda 2, Kaanda 3* and *kaanda 6* (Ref 2). *Vichruta*, stands for darkness and *Moola* carries an adjective *Arishta*. This word has two meanings, one standing for sweet and second associated with bad associated with death. Astronomically, *Moola* is in line with *Milkiway* (Milky Way) galactic center." http://www.vedicastronomy.net/stars_dhanu.htm

"If one star is to be identified as *Moola*, then the best candidate for *Moola* or *Vichruta Nakshatra* is 42 q OPH from Ophichius zodiac of the European system. It falls in the star band and is 50 minutes or 13 degrees (E-W) away from *Jyeshta*. Its brightness is +3.28. Arab Sabik is another strong candidate for *Moola* with +2.43 brightness and is also 13 degrees from *Jyeshta*." http://www.vedicastronomy.net/stars_dhanu.htm

We know that in Sanskrit, *Moola* means the first, the base, the foundation. And *Jyeshta* means, the older. If *Moola* is the first Nakshatram, then *Jyestha* will become the last nakshatram.

"The choice of first *Nakshatra* must correspond to a logically first day of a solar year, which dictates the weather cycles. Which is the year's first day? Astronomically speaking, the spring Equinox day in Northern Hemisphere temperate zone is a logical one. It heralds the arrival of the spring, in temperate zone of northern hemisphere of the earth." from http://www.vedicastronomy.net/stars_appendix.htm

"*Rishi Gargya* starts the list of twenty seven *nakshatra*'s starting with *Krittika*. Choice of *Krittika* as the first of twenty-seven is very significant. In contrast *Jyotishya Shaastra* uses *Ashwini* as the first star" from http://www.vedicastronomy.net/stars_appendix.htm

Atharvana Veda Kaanda 19 / Sooktam 7

गार्ग्य ऋषिः

नक्षत्राणि देवता

त्रिष्टुप्/भुक् छंदः

चित्राणि साकं दिव्नि रोचनानि मरीमृषाणि भुवनेज्वानि।
तुर्मिशं गुगतिगिच्छगानो अह्नाणि गीर्भिः सपर्यागि नाकगृ१।
गुह्वममे कृत्तिका रोहिनी चास्तु भद्रं गृगशिरःशगादां ।
पुनर्वसू सूनृता चाम पुष्यो भानुराश्लेषा अचनं गघागो१।
पुण्यं पूर्वा फल्गुनी चोत्र हस्तश्चित्रा शिवा स्वाति गुग्गोमे अग्तु।
राधे विशाखे गुह्वानुराधा ज्येष्ठा गुनक्षत्रगष्टि गूलगृ३।
अन्नं पूर्वा रागतां मे आशाढा ऊर्जं देव्युत्तरा आ वहंतु।
अभिजिन्मे रागतां पुण्यगेव श्रवणः श्रविष्ठाः कुर्वंतु गुपुष्टिगृ४।
आ मे गृहच्छतभिषग् खरीय आ मे दूया प्रोष्षपदा गुशर्मः।
आ रेवतो चाश्वयुजौ भगं ग आ मे रयिं भरण्य आ वहन्तु॥६।

I think that it is logical that 'when the stars were named', Moola was the first Nakshatram and Jyeshtha was the last. Therefore I think that the Spring Equinox was in Moola.

How many years ago was this?

50.26 seconds of arc shift in 1 year., due to precession.

Moola to Ashwini is : 240 degrees = $240 \times 60 \times 60 = 864000$ seconds of arc

Shift of the Vernal Equinox from Moola to Ashwini takes place in : $864000 / 50.26 = 17190.6$ years.

Shift of the Vernal Equinox from Jyeshtha (the first, or oldest) to Ashwini takes even longer.

1. Did our ancestors know astronomy 17200 years ago?
2. Did our later ancestors know that Moola Nakshatra points to the center of our Milky Way Galaxy? and work backwards?
3. A Rig Vedic verse observes the Winter Solstice in Revati (6500 BC)
4. Rishi Gargya mentions in the Atharvana Veda, that the Ayana was in Magha and mentions Krutika as the first star. Taking these two pointers, Dr. S. Balakrishna has calculated *Rishi Gargya's Sookta* was composed near 2400 BC, dating *Atharvana Veda* to at least 2400 BC.

Our Karthika Masam and Dhanur Masam worship prove that, we always that the Moola Nakshatram was sacred.

Dhanur Masam is a Solar Month, when the Sun is in Dhanus (Sagittarius). This rasi (Zodiac Sign) begins with the Moola Nakshatram. The Moola Nakshatram points to the centre of the Milky Way galaxy. So if you turn to the east and pray at sunrise in Dhanur Masam you are actually looking at Vaikuntham. This is a very special time of

prayer for Vaishnavaites.

See: <http://oldthoughts.wordpress.com/2008/10/12/karthika-masam-and-dhanur-masam/>

Moola is also called "Simharksha."

Moola Nakshtram in Astrology :

Chapter 94 : Brihat Parasara Hora Sastra : (Source) 11-13. A boy, or girl, born in the 2nd, 3rd, or 4th quarter of Aslesha Nakshatra, destroys his/her mother-in-law and a boy, or a girl, born in 1st, 2nd, or 3rd quarter of Mula Nakshatra, becomes the destroyer of his/her father-in-law. Therefore suitable measures, as may be possible within ones means, should be taken at the time of the marriage of such boys and girls. There will be no evil effect, if the husband has no elder brothers. *If we can date this particular verse we will know when the fear of Mula Nakshatra came into our society. We must find out if it is actually by Parasara or an interpolation...*

See Also : **Moola Nakshatram, as Saraswathi Devi's birthday in the Dasara Navarathri.**

Moola Karthe, Dhanur Masam, Sri Maha Vishnu

When the sun lines up with or moves past the **Moola Nakshatram**, we have Moola Karthe. Like every karthe, it lasts for about a fortnight. This is a wonderful time for Vaishnavas, since the Moola Nakshatram is in the direction of the center of the galaxy, the ksheera sagaram or milky way. So for those of us who have faith that Sri Maha Vishnu is there at the center of the milky way, the sun will point you to Vaikuntham. *(The prescribed time is around sunrise).*

Moola, Purvashada and the first pada of Uttarashada make up the Dhanur Rasi. Since the sun will 'transition past these **nakshatras** from Dhanus Sankranthi to **Makara Sankranthi.**, this solar month is called Dhanur Masam as per the Telugu-Sanskrit calendar. Vaishnavas, the devotees of Vishnu, offer many special sevas and prayers to Sri Maha Vishnu during this month.

Revathi Nakshatram

I have collected what references I could find to Revati in the Vedas and Mahabharata.

Go here for the story of **Revathi in the Bhagavatham** and go here for the time analysis of the **Revati, Raivata, trip to Brahma.**

1) from: Rig Veda Book 5 Hymn 51

सवसित् मितस्वरुणा ॥॥॥॥॥ ॥॥॥॥ ॥॥॥॥ | let Revati be safe in her path.
सवसित् न इन्द्रश्चाग्निश्च सवसित् नो अदिते कधिर् ||
सवसित् पन्थाम अनुचरेम स्यारश्चन्द्रसाव इव |
पुनरददताघ्नता जानता स गमे महि ||

This verse refers to the path of Revathi. That could be the east to west path, observable daily, and the interest in Revathi could be that she was the 'first' or 'spring' star.

Or it could be that the path refers to the precession of equinoxes – as is indicated by the Mahabharata story. *To me this would mean, that the path of Revati was observed by the time this hymn was written. To observe a precession of 1 degree, it would take a 60 year cycle. (Indian year names cycle after 60).*

Between Hipparchus and his student Ptolemy, the greeks figured out the precession of equinoxes from 150 BC to 150 AD, over a period of 300 years, by observing Spica (Chitra). It is reasonable to think that a family of rishis, would not need more than that period of time to observe the same thing – the difference being that they observed the Revathi Nakshatram. If they had better observatories and better maths, they could have done it in a shorter period of time. I am sure that at least these rishis knew about it: Mrkandu, and his son Markandeya, Vasishtha, his son Shakthi, his grandson Parasara and great grandson Vyasa, Bhishma and Krishna.

2) Rig Veda Book 10 Hymn 86

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(I am yet to translate this mantram.)

3) **yajur Veda kanda 4 iv. 4. 10.** This mantram, of the Yajur Veda, starts with Krttika as the first nakshatram and states that Pusan is the deity of Revati.

"Revati the Naksatra, Pusan the deity; "

4) SECTION LXXXIII udyoga parva (Mahabharata): Krishna gets ready to go to hastinapura with the message of peace, under the Revati Nakshatra

...The night having passed away, a bright sun arose in the east. The hour called *Maitra* set in, and the rays of the sun were still mild. **The month was (*Kaumuda Kartika*) under the constellation *Revati*.** It was the season of dew, Autumn having departed. The earth was covered with abundant crops all around. It was at such a time that Janardana.....

5) **SECTION CX: Book 13: Anusasana Parva, Mahabharata: Bhishma's advice to Yudhishthira.**

"Bhishma said, '***In the month of Margasirsha, when the moon comes in conjunction with the asterism called Mula***, when his two feet are united with that very asterism, O king, when Rohini is in his calf, when his knee-joints are in Aswini, and his shins are in the two Ashadhas, when Phalguni makes his anus, and Krittika his waist, when his navel is in Bhadrapada, ***his ocular region in. Revati***, and his back on the Dhanishthas, when Anuradha makes his belly, when with his two arms he reaches the Visakhas, when his two hands are indicated by Hasta, when Punarvasu, O king, makes his fingers, Aslesha his nails, when Jyeshtha is known for his neck, when by Sravana is pointed out his ears, and his mouth by Pushya, when Swati is said to constitute his teeth and lips, when Satabhisha is his smile and Magha his nose, when Mrigasiras is known to be in his eye, and Chitra in his forehead, when his head is in Bharani, when Ardra constitutes his hair, O king, the vow called Chandravrata should be commenced. Upon the completion of that vow, gift of ghee should be made unto Brahmanas conversant with the Vedas. As the fruit of that vow, one becomes possessed about knowledge. Indeed, one becomes, in consequence of such a vow, as full (of every blessed attribute) as the moon himself when he is at full.'"

SECTION LXXXIX By performing the Sraddha under the constellation Revati one acquires much wealth in utensils of white brass and copper.

Denebola (Uttaraphalguni) and Deneb (?)

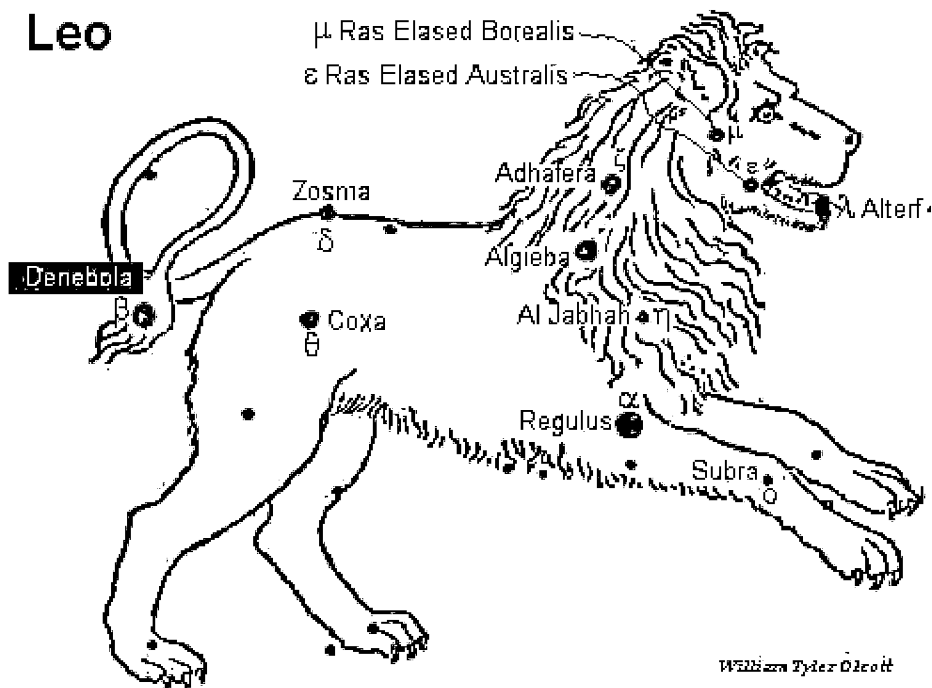
I am on the trail of the 7500 year old supernova explosion near Cygnus.

Caution : Deneb in Cygnus is not Denebola in Simha. They are not even physically close.

There are many Denebs. (They are qualified as Deneb Al This or That.)

- While Cygnus is translated as Swan — Cygnus pronounced as Signus is a variant of Signah or Singah (Simha).
- Interestingly again, the nakshatram identified below as Denebola, **UttaraPhalguni, is in Simha and Kanya Rasis.**
- It has been associated with bad luck in some astrological systems as indicated by source A below.
- *Source B connects Deneb with Cygnus.*

Leo



- **Source A:** "**Denebola** — sometimes **Deneb** (meaning "tail") — is the modern name for this star, abbreviated from **Al Dhanab al Asad**, the Lion's Tail,
- the Greek **Alkaia** (meaning 'Mallow');
- the 17th century German astronomer Bayer gave it as **Denebalecid** and **Denebaleced**;
- English writer on globes John Chilmead (circa 1639), as **Deneb Alased**; and the 17th century German astronomer and ephemeris creator Schickard, as **Dhanbol-asadi**. The Italian astronomer Riccioli (1598-1671) omitted the first syllable of the original, and called the star **Nebollesed**, **Nebollassid** "of the Nubian astrologers," and **Alazet apud Azophi**, his title from the 10th century Persian astronomical writer Al Sufi. Elsewhere it is **Nebulasit** and **Alesit**; the **Alfonsine Tables** have **Denebalezeth** and the very appropriate **Dafira**, from the similar Arabic term for the tuft of coarse hair at the end of the tail in which the star lies. The English astronomer Proctor (1834-1888) called it **Deneb Aleet**, and there may be other degenerated forms of the original. The 13th century Persian astronomical writer Al Kazwini cited **Al Aktab al Asad**, the Viscera of the Lion, or **Al Katab**, a Small Saddle: inappropriate names, the German astronomer Ideler (1766-1846) said, and inferred that they should be **Al Kalb**, which in the course of time might have wandered here from **Regulus**, the genuine Kalb, or Heart, of the Lion.

- It marked the 10th *manzil* (Arabic Moon Mansion), **Al Sarfah**, the Changer, i.e. of the weather, given by the 15th century Tartar astronomer Ulug Beg as the star's individual title; and the Persian astronomer Al Biruni (973-1048 A.D.) wrote of it: "The heat turns away when it rises, and the cold turns away when it disappears." English writer on globes John Chilmead (circa 1639) cited **Asumpha**, which he attributed to Alfraganus; Baily called this **Serpha**; and the 17th century English orientalist Thomas Hyde changed it to **Mutatrix**.
- ***With the 4th-magnitude Fl. 93, it constituted the 10th nakshatra (Hindu Moon Mansion), Uttara Phalguni, and was the junction star with the adjacent Hasta; the regents of this and the next asterism, the Purva Phalguni, being the Adityas, Aryaman and Bagha. The Persian astronomer Al Biruni (973-1048 A.D.), however, said that Hindu astronomers pointed out to him a star in Coma Berenices as forming the lunar station with Denebola; and they claimed that the great scientific attainments of Varaha Mihira were due to his birthday having coincided with the entrance of the moon into Uttara Phalguni.***
- The Chinese knew it, with four small neighboring stars, as **Woo Ti Tso**, the Seat of the Five Emperors, surrounded by twelve other groups, variously named after officers and nobles of the empire. In Babylonian astronomy it marked the 17th ecliptic constellation, **Zibbat A.**, the Tail of the Lion, although the German orientalist Epping gives this with considerable doubt as to its correctness. Other Euphratean titles are said to have been **Lamash**, the Colossus; **Sa**. Blue, the Assyrian **Samu**; and **Mikid-isati**, the {p. 259} Burning of Fire, which may be a reference to the hot season of the year when the sun is near it.
- The Sogdians (an Iranian people) and Khorasmians (east of Persia) had a similar conception of it, as shown in their titles **Widhuand Widhayu**, the Burning One; but the Persians called it **Avdem**, the One in the Tail. Hewitt writes of it as, in India, the **Star of the Goddess Bahu**, the Creating Mother. With theta (θ **Coxa**), it was the Coptic people of Egypt **Asphulia**, perhaps the Tail; but Kircher had a similar (Greek) **Aspolia**, in Virgo, as from Coptic people of Egypt.
- ***Denebola was of unlucky influence in astrology, portending misfortune and disgrace, and thus opposed to Regulus in character as in position in the figure.***
- It comes to the meridian on the 3rd of May, and, with **Arcturus** and **Spica**, forms a large equilateral triangle, as also another similar with Arcturus and **Cor Caroli**, these, united at their bases, constituting the celebrated **Diamond of Virgo**. Several small stars, some telescopic, in its immediate vicinity, are the **Companions of Denebola**. [**Star Names, Their Lore and Meaning**, Richard Hinckley Allen, 1889]."

Source B : "September night sky for mid northern latitudes

On a weekend or on a holiday if you have a good sunshine you might as well take out your binoculars and telescopes and give them a bit of a sunshine so that if some moisture is trapped then it would evaporate. Long spell of rains have washed out the dust in the atmosphere and if the sky clears up one has a crystal clear sky.

You can start with southeast where Scorpius, the Scorpion [Vruschik] is still well above the horizon. This is one of the constellations that quite resembles its name. The brightest star in this constellation is Antares (Jyestha).

Sagittarius [Dhanur] is following Scorpius. Center of milky way lies in this constellation. This region between Scorpius and Sagittarius contains number of clusters and nebulae and it is worth sweeping this with a good pair of binoculars. Look for M6 and M7, the best one is M22 a globular cluster. This cluster resembles a comet that is just discovered. It appears a fuzzy patch of light through a pair of binoculars.

Turn to west Arcturus, (Swati) is still above the horizon. Turn further right to northwest. Only the tail of Ursa Major, Great Bear is now above the horizon. Look for the second last star in the tail Mizar. This star is visual binary. It has a companion Alcor. Both the stars can be seen if you have good eyesight. In Indian astronomy Mizar is Vashishtha and Alcor is Arundhati.

Well above the western horizon, above Bootes, you can trace out Hercules [Shauri]. The object to be looked for is M13 a globular cluster. This is a compact cluster of stars.

To its north is Draco, the Sea Dragon (Kaliya). It winds quite a bit through different right ascensions.

Right overhead is (almost) a right angled triangle of three bright stars. The stars belong to three different constellations. Altair [Shravan] in Aquila, the Eagle [Garuda] and ***Deneb in Cygnus***, the Swan [Hans] are almost aligned on the north south line. To there is Vega [Abhijit], in Lyra, the Lyre [Swaramandal].

This group of stars was named summer triangle by Patrick Moor. All the stars are the brightest stars in their respective constellations. Vega which is the brightest star in the northern hemisphere. The second brightest of the summer triangle is Altair. Shravan is 22nd Nakshatra.

Look for Albeireo and M39 in Cygnus. Alberio is a beautiful binary star whose one component is red and the other is blue. 5 inch mirror will split them. M39 open cluster or galactic cluster. Easy object for binoculars.

Well above the eastern horizon is one of the 'land marks' of the night sky is Great Square of Pegasus, the Winged Horse [Maha-ashwa]. You just cannot miss it. The sides of the square are almost aligned north-south and east-west. The stars on the western arm of the square make our 25th nakshatra Purva Bhadrapada and those on the eastern arm are of 26th nakshatra Uttara Bhadrapada. Purva and Uttara are in the sense of earlier and later respectively, in their movement in the sky and not in the sense of direction.

Halfway between Pegasus and the horizon is Cassiopeia [Sharmishata]. This is a constellation in 'M' shape with its right leg pulled too much to right. You might recall that Saptarishis are used for finding north direction in the night. This constellation can be used for finding north when Saptarishis are below the horizon. Take the first three stars of 'M' which make an equilateral triangle. Now take perpendicular bisector of the first and star. This line, when extended towards horizon will go through the Polaris [Dhruva], Pole Star. Using a pair of binoculars if you scan on the line joining third and fourth stars of Cassiopeia and extending to east you will reach a binary open cluster of stars h & c. These are lovely pair of star clusters.

The material here can be used freely.

It is, however, expected that the source may be acknowledged.

Credit : Inter-University Centre for Astronomy and Astrophysics, Pune.)

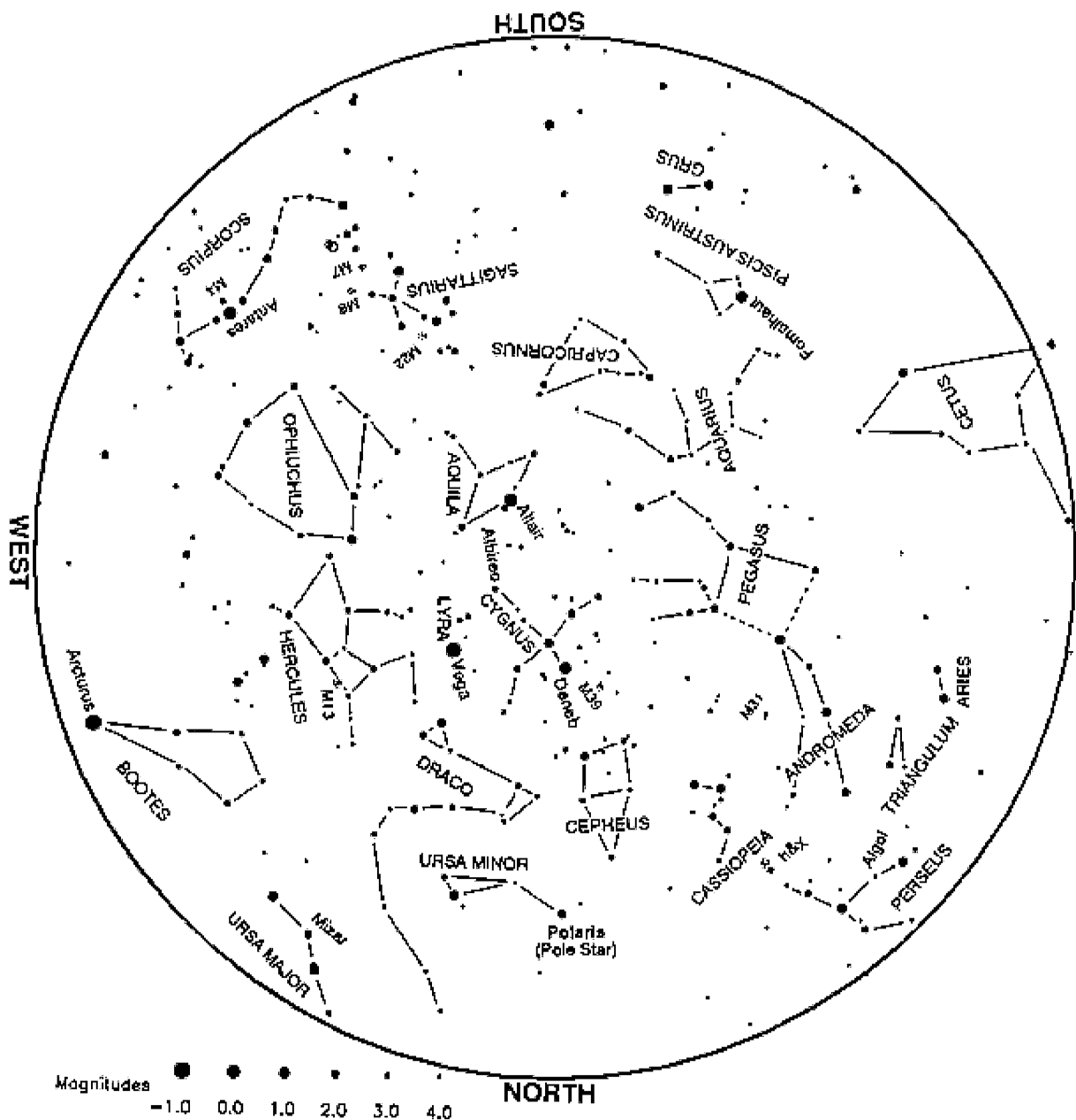
The site is created for the Public Outreach Programme, IUCAA

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Samir Dhurde – samir@iucaa.ernet.in +91 20 2560 4603

Page created June, 2007 and Updated Sep, 2007"



"The star map above is drawn for September 15, at 21:00 hours Indian Standard Time (IST) for the central station of India. The map shows slightly more sky than that will be visible from this station such a way that the map can be used elsewhere in India at 21:00 hrs. The map can be used at 22:00 hrs. in early at 20:00 hrs. later this month. Use a flash light covered with red gelatine paper to read in the night."

Credit : Inter-University Centre for Astronomy and Astrophysics, Pune.

Note on Uttara Phalguni : *Two stars are at same time distance from Poorva Phalguni. If a single star has to be identified as Uttara Phalguni, then, as per Dr. Balakrishna, 94 bLeo/SAO 119076 / HD 102870 is the best candidate, despite Denebola being brighter. Reason is that Denebola is about 5 diameters out of Moon traverse band while Zavijava is in the moon traverse band. Uttara Phalguni, is also called Zavijava by Arabs.*

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Agni Nakshatram (Krutika Nakshatram, Karthikeya)

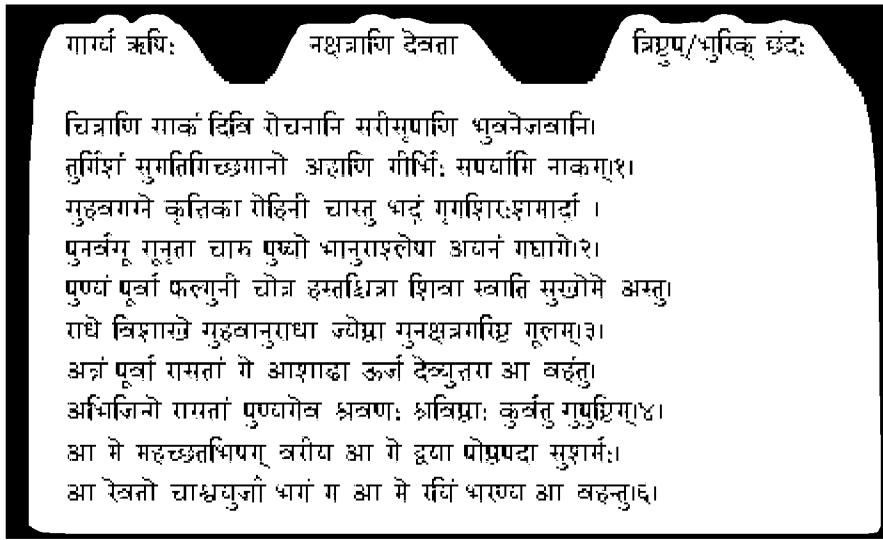
Posted by **satyask** on November 3, 2009

Agni Nakshatram : There is only one **Nakshatram** that is dedicated to the Vedic Luminary **Agni (Energy)**. That Nakshatram is Krutika (Kritika, Krttika).

- It is Agni Deva who carried the burning Siva Bijam that became Karthikeya (Shanmukha) to Ganga who bore him and the Krutika Sisters who raised him. (*Amar Chitra Katha Version*)
- In the Vedic times **Nakshatras were dedicated to Vedic Luminaries** such as **Indra**, Agni, Bhaga and so on. (See **Nakshatradhipatis from Vedic deities to Grahas, after Valmiki's Ramayana**).
- In later day astrology and **vimsottari dasa systems**, Nakshatras were dedicated to **grahas** such as sukra, kuja etc. The graha nakshatridhipathi for Krutika is Kuja, Mangal or Mars.
- It is interesting to note that: Kuja is now also considered a son of Siva, just like Karthikeya, the adopted son of the Krutika sisters and the slayer of Tarakasura. And just as Karthikeya was a War-Lord-God who led the **Devas** to victory, so also Kuja is considered warrior like.
- It is interesting to note that the Mongols, actually call themselves, "Mangals" and they were at one time very fierce and warrior like.

Krittika Nakshatram (Astronomy and Dating) : refers to the set of six 'sister' stars.

- This set of stars is identified by classical European system as Plaeidis.
- Brightest amongst them is called Alcyone by Arabs.
- If a single star has to be identified as representing *Krittika Nakshatra*, best candidate is 25hAries AlCyone.
- **Arundhati** Nakshatra (though not a part of **the 27 day pointing fixed stars**) is near the *Krittika*. It is said to be the eighth star in the cluster *Krittika*. (**Nakshatras, Masas, Rtus, Varas, Rasis, Specialities**)
- Kruthika nakshatra (constellation) constitutes last padam of Mesha (Aries) and the first 3 padams of Vrishabha (Taurus). (kruthika: *Location = Alcyone, Celaeno, Electra, Taygete, Maia, & Asterope:(Pleiades) Eta, 16, 17, 19, 20, & 21 Tauri*)
- The Vedanga Jyothisha begins the count of Nakshatras from Krithika Nakshatram. Today we count beginning from Aswhini Nakshatram. This can be interpreted to mean that the spring equinox occurred in Krithika Nakshatram at the time that verse was composed.



R.V. 1.164 Autumn Star Agni (Krittika, Alcyone 59.5 long) : Dirgha tamas Rshi. (See : **Date of Veda Mantras and Equinoxes and Dating Vedas**)

Kruthika Nakshatram and the Moon : Karthika Masam (Lunar Month):

The lunar month Karthika Masam is named after the Kruthika Nakshatram. This usually occurs in or close to the english calendar month of November.

- **List of Karthika Masam Celebrations in Andhra :**
 - **Om Namah Sivaya. Karthika Somavaram and Karthika Pournami today.,**
 - **Ksheerabdi Kanya – Sree Mahalakshmi – Ksheerabdi Dwadasi**
- **Connecting Karthika Masam Celebrations of USA and India : Halloween, Karthika Pournami, Yama Deepam**

Kruthika Nakshatram and the Sun : Kruthika Karte :

The fortnight called Kruthika Karthe occurs in the month of May.

- ***Kruthika Karthe Clebraions in Tamil Nadu:*** Tamilians, who follow the solar calendar, celebrate Kruthika Karthe, under the name **Agni Nakshatram** Festival. It is celebrated in honour of **Siva's** son Karthikeya also revered as Murugan, Palani, Subrahmanya, Kumaraswamy among many other names.
- **Source :** "Agni Nakshatram is a 14-day period in May, the hottest part of the year. It is the season when devout persons go round the hill in the Giri Veedi as much out of faith as for reasons of health, in the early morning (1 am. to 10 a.m.) and evening (4 to 10 pm) in large numbers. Just now, the kadamba trees (Eugenia Racemosa), favourite flora of **Murugan**, are in full bloom all around the hill shedding their fragrance and conveying healing properties to all the walkers. At Kodumudi (Periyar District), ardent devotees by the thousands collect Cauvery water in scorching sun and bring it in kavadis for abhishekam of the deity and the sanctum sanctorum at the hill is a large pool of water! It is so cool that one forgets the summer-heat. The water bearers are accompanied by artistes in a variety of folk-music and folkdance items. Their procession by itself is colorful and difficult to forget. On the concluding day, the festival deity of the Periyarâyaki Temple marches to the Adivaram and there is a majestic procession round Giri Veedi."

Onam - Thiru Onam - Shrona - Sri Ona - Sravana

Posted by **satyask** on September 19, 2009

Chingam Rasi – Simha Rasi. The months followed in Kerala are the solar months.

Thiru Onam Nakshatram – Sravana Nakshatram – Connected to Vamana (Hindu paper article gives it as birth star of Vamana – Trivikrama)

Onam is the day when Mahabali comes to visit Kerala. Mahabali visits Karnataka on Bali Padyami, the day next to Deepavali. He visits Andhra on Mahasankranthi day!

P.S. There is a custom in Kerala, where the king is referred to by his janmanakshatram (janmanalu).

One of the famous kings is Sri Chitra Tirunal. Present king is Uttarada (Uttarashada) Thirunal Marthanda Varma.

Locating Purusha (Vishnu) : Using Purusha Suktham (Rig Veda)

Posted by **satyask** on March 8, 2010



<http://rajandraws.wordpress.com>

The 90th **suktham** of the tenth **mandala** of **Rg Veda Samhita**, is the puruSa sUktam. The Vajasaneyi Samhita of the Shukla Yajur Vedam, the Taittiriya Aranyaka of the Krishna Yajur Vedam, the Sama Veda, and the Atharvana Veda, also contain the Purusha Suktham with slight variations.

Free Audio Online : <http://www.vedamantram.com/audio/purusha.mp3> (with Yajur Veda Swara Chanting)

The Purusha Suktham is one of the Pancha Suktams of the Sri Vaishnava sampradaya or tradition. The other four are the Narayana Suktham, Sri Suktham, Bhu Suktham, and the Nila Suktham. In South India, the Purusha Suktham, Vishnu Suktham, Sri Suktham, and Narayana Suktham are generally chanted together in paarayanam. The Sri Rudram, Purusha Suktham, Upanishads, **the Gita**, and the Vishnu Sahasra Naamam are also recommended for daily paarayanam – chanting. Since the Purusha Suktham is seen in all Vedas, it is cited as the essence of all Srutis by **Veda Vyasa** in the **Mahabharata**. **Saunaka**, **Apastamba**, and Bodhayana have also written concerning the use of the Purusha Suktham. **(Source)**

Starting from the first **mantram** of the puruSa sUktam, there are variations in translations provided by various sources.

Mantra :

सहस्रशीर्षः पुरुषः ।	sahasraśīrṣaḥ puruṣaḥ ।
सहस्राक्षः सहस्रपात् ।	sahasrakṣaḥ sahasrapāt ।
स भूमिं विशती वृत्ता ।	sa bhūmim viśatī vṛttā ।
अत्यतिष्ठद दशङ्गुलम् ।	atyatisthād daśaṅgulaṁ ।

sahasra s'irSA puruSah | sahasrAkSah sahasrapAt |
sa bhUmim vis'vato vRtvA | atyatiSTat das'Angulam || 1 ||

Translation :

The puruSa has thousands or infinite (sahasra) of heads (s'irSA), thousands of eyes (AkSah) and thousands of feet (pAt). (See : **Many eyes, many arms, many heads and many feet**)

He, having encircled (vRtvA) the earth (BUmim) with the universe (vis'vato : from all sides)
(See : **Agne yam yagnyam adhvaram visvatah paribhurasi**)

Stood beyond it at a distance of 10 thumb lengths. (This line is variously interpreted. Word by word given below.)

ati = beyond, atisTat = stood, dasa = 10, angula = inch, length of a thumb. See : **The Harappan angulam | varnam**

The Meaning :

The Purusa of infinite capabilities (intelligence, strength, skill etc), enveloped the earth with the universe (stars, galaxies.. etc) and stood beyond at about 10 inches' (a foot approx), length.

Interpretation :

Vishnu is beyond Dhruva (Polaris), the furthest observable star to the north along the earth's axis, which makes tiny revolutions about the axis. That is where He stands.

*The reference to 10 thumbs may have to do with angular measurements that can be made by hand. See **Measuring distances in degrees in the sky using your hand** 10 thumbs would be 20 degrees.*

Agastya - Canopus

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The article in the link quoted below makes a connection between canopus and Agastya. It makes 2 sets of assumptions and calculations arrives at a date for Agastya around 4000 BC.

Assumption set A:

- The nakshatram Canopus was named Agastya after the Rishi Agastya.
- This was so because he was the first sanskrit northerner to sight it.
- He sighted it as soon as he crossed the Vindhyas.

Calculations:

- Agastya (Canopus) was visible in the north of the Vindhyas only after 5200 BC and in Kurukshetra (Delhi) only from 3100 BC assuming that for a star to be visible its meridian altitude has to be at least 5°.
- Agastya (Canopus) was visible in the north of the Vindhyas only after 4000 BC assuming that for a star to be visible its meridian altitude has to be at least 4°.

Conclusion A:

- Agastya Rishi's Vindhya Crossing was between 4000 BC and 5000 BC.

Assumptions B:

- Agastya started the first Sangam.
- The last Sangam ended around 0 BC.
- Each Pandyan king ruled for 20 years.

Calculations B:

- There were 89, 59 and 49 Pandyan kings in each of the Sangams.
- $(89+59 + 49) * 20 = 3940$ years

Conclusion B: Agastya's time was 4000 BC

Notes :

from: <http://www.ias.ac.in/currsci/dec252005/2174.pdf> by K.D. Abhyankar.

1. Agastya, is the author of 25 hymns (nos 166 to 190) of the first 'mandala' of the Rigveda.
2. Canopus, the second brightest star in the night sky, is called Agastya in India.

3. This star is close to the ecliptic south pole, having an ecliptic latitude of -76° .
4. As the celestial poles go round the ecliptic poles due to the phenomenon of precession of the earth's axis of rotation, this star becomes visible from different latitudes on the globe at different times. If we assume that for a star to be visible at a place its altitude at the meridian passage should be at least 5° , then calculations give the visibility curve for Agastya (Canopus).
5. Agastya was not visible from any part of India before 10,000 BC.
6. First it became visible at Kanyakumari around that epoch. Thereafter, as it was brought more and more northwards by precession, it became visible at various places in India.
7. It became visible in the east coast (in the present Chennai region) in 8500 BC, and in the present day Hyderabad in 7200 BC, in the Vindhya region in 5200 BC, **at Delhi in 3100 BC.**
8. At present it is visible from most parts of India for longer or shorter durations. This cycle will repeat after every 25,725 years. It is thus clear that around 5000 BC, the star Agastya was visible from the south of the Vindhyas, but not from the north of it.
9. If sage Agastya was the first to cross the Vindhyas from the north, he would have been the first northerner to see the star. Hence the star has been named after him, just as the Magellanic clouds in the southern sky are named after the navigator Magellan, who first saw them as he sailed southwards.
10. This fixes an epoch of 5000 BC for sage Agastya. This date is based on the assumption that for a star to be visible its meridian altitude has to be at least 5° .
11. If we make 8° meridian altitude as the criterion for visibility, the date of Agastya would be shifted to about 4000 BC. The dates 5000 and 4000 BC should therefore bracket the probable epoch of Agastya crossing the Vindhyan mountains.

Tamil literature tells us about the three Sangams which were patronized by 89, 59 and 49 Pandyan kings respectively. The first Sangam was supposed to have been started by Agastya and the last Sangam ended sometime at the beginning of the Christian era. we have 197 kings between these two dates. If we assume a span of 20 years for each king on an average, we get a total period of about 4000 years, which would place Agastya's epoch around 4000 BC, in agreement with the astronomical dating.

Dhruva Nakshatram

Click for [Story of Dhruva](#)

Dhruva is the name of the Pole Star. It means The Firm.

The following points have been noted from a KEYNOTE ADDRESS, titled, Creation of Time as per Srimad Bhagavatam by Dr.K. Sivananda Murty, Anandavanam, Bheemunipatnam.

“Dhruva is granted by Vishnu a permanent deathless place far above the great bear (*Saptarshis*). The place is described as *Dhruvamandalame* meaning a fixed point identified as the Pole Star. Vishnu describes this point as the one around which the seven rishis (*Saptarshis* or the Great Bear) circumambulate in a period of 2600 years while the stars or the Ecliptic completes one revolution around that place in a period of 26000 years. Vishnu assures him that his place remains unaffected even when the three worlds below i. e. *Bhuh*, *Bhuvah* and *Suvahare* destroyed.”

In the same episode of Dhruva, it is said that Dhruva married one Bhrami, the daughter of Prajapati Simeshvara and he had two sons from her named Kalpa and Vatsara, the aeon and the year. These names are evidently indicating heavenly phenomena. Dhruva, the fixed point of the Pole Star weds Bhrami, the principle of motion. This is the result of his position with reference to Simeshvara, the Ecliptic. This wedlock or the juxtaposition of the Pole point with the Ecliptic results in a relative periodic motion. The periods of time involved are the year and the aeon. This indicates the stabilization of the Pole Star with a fixed distance Northward from the Ecliptic. The Sun's travel on the Ecliptic is the aeon while the earth's revolution round the Sun is one year. Earlier the person Dhruva was ordained to stay at the Polar Point for 26000 years when the Taramandala and the Grahamandala complete one pradakshina around him. This should be the aeon referred to here.

“Dhruva's son was Vatsara, the year. Vatsara's son Pushpanna (the colourful) indicates a long dusk time. His wives Prabha and Dosha represent the day and the night. Prabha, the day gave birth to three sons – Praatah, Madhyandina and Saayamkala namely the morning, the midday and the evening. His wife Dosha (night) also gave birth two three sons, pradosha (nightfall), Niseedhi (midnight), and Vyushti (the predawn). Vyushti's grandson was Chakshusa, the second Manu and as the very name indicates it marked the beginning of the visible dawn of human life on earth.”

More on Masas

Margasira Month (Nov-Dec) Celebrations

Mrgasira means the head of an animal (deer). The lunar month Margasira Masa is named after Mrgasira **Nakshatram**.
Mrgasira may be El Nath.

Sivaratri : Though, as per the Siva Purana (retold by Ramesh Menon)., : Sivaratri is on the day of the Arudra Nakshatra of Margasira Masa.. Please See : **Tamil and Hindi Calendar Month Name Variations with Sanskrit (Telugu) Month Names**

December: December is a big celebration for Ayyappa devotees. Ayyappa is the son of Shiva and Vishnu as per general belief. The time of celebration (late December) and the link with both Shiva and Vishnu interest me. December seems to be important both for Moola nakshatram (Dhanur Masam – Vishnu – see one of my earlier posts) and Arudra nakshatram (Margasira masam – Arudra darsanam – Siva – see my notes below).

Late December is also important for the Winter Solstice – the Sayana commencement of Uttarayana – Christmas and for Datta Jayanti. (Sayana system refers to moving tropical zodiac and nirayana refers to the immovable sidereal (stellar zodiac. The tropical zodiac refers to the seasons and the sidereal zodiac refers to stellar alignments. The tropical zodiac is affected by precession. The sidereal zodiac has corrections for precession built in)

Arudra Darsanam :

skandha purANam describes Arudra Darsanam. When the sun shines in the dhanur rAsi that is in the month of mArkazi, in the day of thiruvAdhirai (Arudra) for which Rudra is the devata this vratam is observed. ([source](#))

The pre-dawn hours of the full moon night, *in the month with the longest nights in the year (coinciding with the asterism of Tiruvadirai in the tamil month of Margazhi)* marks the auspicious time for Arudra Darisanam – of Nataraja in Saivite temples all over Tamilnadu. ([Source](#))

SivaRatri : (Source)

skandha purANam describes four shiva rAtris. The first one is **nitya shivarAtri (daily shivarAtri – every night)**. The second one is the **mAsa shivarAtri which is observed on the kRiShNa paksha chaturdasi** (fourteenth moonday on the moons diminishing phase). The third one is the **mAgha prathamAdi shivarAtri which is observed for the thirteen days starting from prathama titi in the month mAga (mAsi) and on the chaturdasi night the Lord is worshiped throughout the night.**

The fourth one is observed on the mAsi (mAga) month kRiShNa paksha chaturdasi. This is the one observed in a widespread manner. **It is also called mahA shivarAtri.**

Notes from <http://indiantemples.com/Tamilnadu/arudra.html> :

1. The eighth day (Dec 21) witnesses a procession of Bhikshatanar commemorating legends associated **Shiva's and Vishnu's trip**through Daarukaavanam in the guise of Bhikshaatanar and Mohini

Notes : from <http://www.dattapeetham.com/india/talks/christDatta.html>

1. The planet Jupiter, changes from one Raashi (twelve astrological signs. Aries, Capricorn etc) to another every year. During the period of retrograde it slows down but still it makes up for the slowness and on an average it changes the Raashi house every year. This change generally happens in the last week of the month December.

2. Lunar months are named after the starting Nakshatras of the Rasis. Thus Margasira month is named after the Mrgasira nakshatra. the full moon of the Magha Masa generally occurs in December.

3. Dattatreya was born on the full moon day of Mrigashira month. That is why Datta Jayanti happens in December only.

4. In december the sun will be in Dhanus Raashi (Sagittarius). On 14th January every year sun moves to the next sign i.e. Makara (Capricorn).

Uttarayanam is defined in 2 ways, in the sayana system as the winter solstice and nirayana system as Makara Sankramanam.

From that day (14th January) the period of Uttaraayana commences(Uttarayana is the period from 14 January to 14 July). The commencement of this Uttarayana happens around January 14th in the system of Nirayana only (Sidereal calculations). But in Sayana system (Tropical calculations), Sun starts his Uttarayana period in the last week of December. The system of Sayana observes the movement of sun and corroborates and finalises the astrological calculations on sun. Presently, this movement of Sun to Uttarayana happens either on 22nd or 23rd of December. But about 2000 years ago (when Jesus was born) this change used to happen on December 25th every year.

5. The word December is from the calendar we use today, i.e. Gregorian calendar. This type of calendar system was started in 1580 by Pope Gregory XIII. "

Geetha Jayanthi – Vaikuntha Ekadasi

The Geeta Jayanti Day is 11th day (Ekadasi) of the bright half (Sukla Paksha) of the month of **Margasira**. It coincides with Vaikuntha Ekadasi. It was the day the **Bhagavad Gita** was revealed

to **Arjuna**, by Sri Krishna. This year it is celebrated on the 28th Nov. Though ekadasi "starts" on 27th afternoon, it is the tithi at sunrise that counts. That is why 28th Nov will be celebrated as Gita Jayanti.

(This year Bakrid falls on the same day. Idu'l Juha Bakrid annually falls on the 10th day of the month of Dhul Hijja of the lunar Islamic calendar. Idu'l Juha is the latter of two Eid festivals celebrated by Muslims, Eid al-Fitr and Eid al-Adha (For legend see : **Source**) (Why is our 11th day their 10th day? also Interesting legend points water springing from the earth and the role of the ram – Future Analysis)).

The Geeta Jayanti Samaroh Festival is celebrated in Kurukshetra. (The location of the Mahabharata war.) The devotees bathe in the holy water of the sacred tanks – Sannihit Sarovar and Brahma Sarovar. The week long festival witnesses wonderful events like Shloka recital, dance, Bhagawatam reading, Bhajans and dramas. (**Source**)

The place of the original Gitopadesa is marked in kurukshetra by a marble sculpture and may be seen by tourists and pilgrims.

The festival of Geeta Jayanti Samaroh is organized by Kurukshetra Development Board of Haryana Tourism, District Administration, North Zone Cultural Centre Patiala and Information and Public Relations Department Haryana. (**Source**)

The Gita was given to us **about six thousand years ago** by Sri Krishna, the Lord incarnate, through His most devoted disciple, Arjuna. Its teachings are based on the sacred Upanishads. (**Source**)

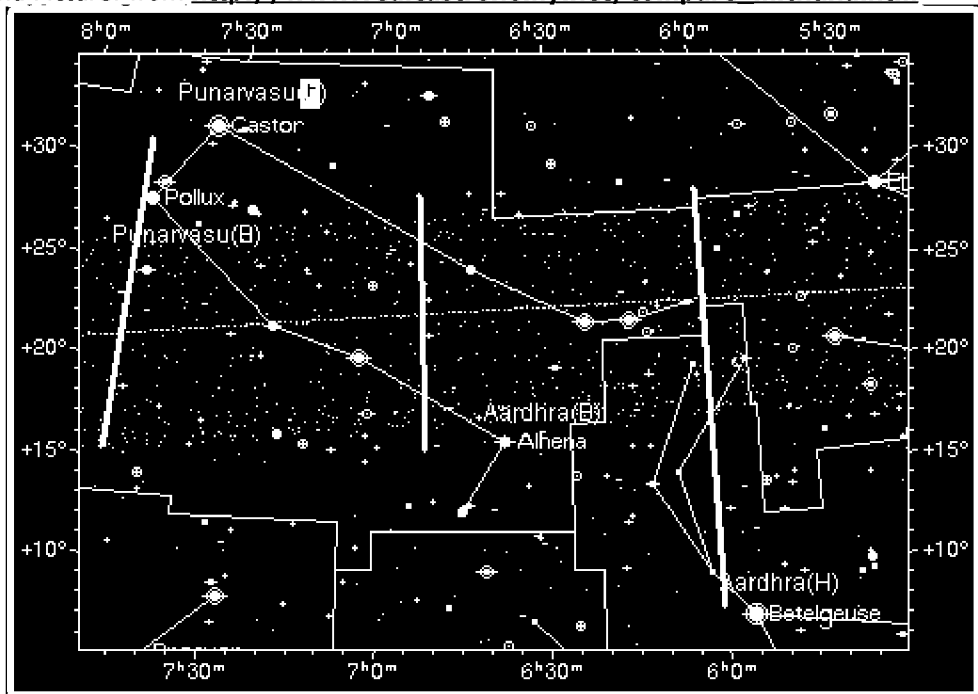
- For a list of all ekadasis and their significance see : <http://www.salagram.net/ekadasilistinfo.htm>
- For a modified story of Vaikuntha Ekadasi based on the brahmanda **purana** see : <http://www.salagram.net/ekadasi-2.htm> (fasting on this day is highly recommended).
- For more on Margasira Masa : See <http://oldthoughts.wordpress.com/sivaratri-december-margasira/>

Common belief is that the gates to Vaikunta are held open in this day and that it is a divine day to leave one's mortal coils.



Arudra is generally accepted as Betelgeuse.. though sri Balakrishna argues well in favour of Al-Hena. I think Betelgeuse, because I think that points to "center" of the universe.. which I think is Siva.

Notes and Picture: from http://www.vedicastrology.net/compare_mithuna.htm



"The figure shows Mithuna raashi or the Gemini Constellation. The vedic Jyotishya states that this Raashi consists of Mrigashira (50% in Mithuna), Aardhra(100% in Mithuna) and Punarvasu (75% in Mithuna). R.H.Allen's identifies Betelgeuse (Ori-58a) as Aardhra (Ref-1,page 311). Balakrishna identifies Al-Hena as Aardhra. R.H.Allen identifies Castor as Punarvasu (Ref-1,Page 331), while Balakrishna identifies Pollux as Punarvasu. Clearly the proposed identities of these nakshathra's are different. Allen's Aardhra is within 5 degrees of his Mrigashira and is a part of constellation Orion. It is 16 degrees away from ecliptic. Balakrishna's identities are within the proper range of Nakshathra's. Also they are within 2 degrees of moon traverse band." (Needs more study)

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Karthika Masam and Dhanur Masam

Posted by **satyask** on October 12, 2008

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Karthika Masam is a lunar month. The full moon of this month is near the Kruthika nakshatra (constellation) which is last padam of Mesha (Aries) and the first 3 padams of Vrishabha (Taurus).
(kruthika: *Location = Alcyone, Celaeno, Electra, Taygete, Maia, & Asterope:(**Pleiades**) Eta, 16, 17, 19, 20, & 21 Tauri*)

The Mondays of Karthika Masam are special to S'iva.

Karthika Masam starts the day after Deepavali. The festival of lights starts from the new moon of the previous month (Deepavali Amavasya) and goes on to the full moon of Karthika Masam.

The brightest full moon occurs close to the winter solstice, which occurs in the month following karthika Masam. (Margasira Masam). That is when the moon is nearest the earth (its perigee) and the earth is nearest the sun. The moon is closer (therefore bigger) and receives 7% more sunlight and is therefore brighter as well.

4 days before this brightest full moon of the year is Vaikuntha Ekadasi, when the gates to Vaikuntha (Vishnu's abode) open. People fortunate enough to die on that day go to Vaikuntha.

Dhanur Masam is a Solar Month, when the Sun is in Dhanus (Sagittarius). This rasi (Zodiac Sign) begins with the Moola Nakshatram. The Moola Nkashatram points to the centre of the Milky Way galaxy. So if you turn to the east and pray at sunrise in Dhanur Masam you are actually looking at Vaikuntham. This is a very special time of prayer for Vaishnavaites.

(Moola: *Location =**The Scorpion's Tail**: epsilon, mu, zeta, eta, theta, iota, kappa, upsilon* (Lesath) & *lambda* (Shaula) *Scorpionis*)

Dhanur Masam ends with Makara Sankramanam or the Sun entering Capricorn. This coincides with the harvest festival (mid Jan). The sun has reached the southern extreme point and starts rising more to the north everyday, everyday for 6 months. This is Uttarayana Punya kalam.

People who die in **Uttarayanam**, don't come back to be reborn on Earth. Bhishma waited for Uttarayanam before he let himself die. The day he died is Bhishma Ekadasi.

Arudra is in Mithuna (Gemini). Arudra points to Rudra or Siva. It is on the other side of the Zodiac from Moola. The Puranas tell that Siva is so large that Brahma and Vishnu could not find his ends.
(Arudra: *Location* = Betelgeuse: *alpha Orionis*)

Does Siva represent the Universe where Vishnu represents the galaxy/galactic centre? I have found so many direct clues to Vishnu, but so far Arudra is my only clue to Siva.

The other clues to Siva are Sivarathri which occurs in February, when it suddenly stops being cold and of course karthika masam.

Clues to Krishna:

The Visakha constellation is also called Radha.

Rohini (father's wife), Revathi (brother's wife) and Phalguna (Arjuna) and Bhadra (Balarama) are constellation names that match the names of important people in Krishna's life.

Krishna was born in Sravana Masam, when the full moon is frequently close to the Srvana nakshatram.

"*Rohini* is the brightest of the 27 Stars used for *Bharateeya Nakshatra* system of names, with a brightness of 0.85. *Rohini* is identified as birth star of Sri krishna. The distance between *Krittika* and *Rohini* is about 12.5 degrees (E-W). If a single star has to be identified as representing *Rohini Nakshatra*, best candidate is 87 α Tau/SAO-94027/HD -29139/ Aldebaran." Rohini is fully in Vrishabha Rasi.

Ancient Indian Astronomers

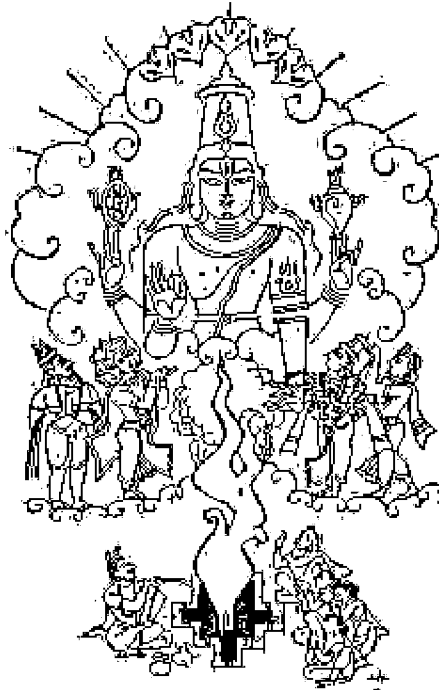
The 18 Ancient Astronomical Siddhantas.

Posted by satyask on June 28, 2009

The 18 Ancient Astronomical Siddhantas are as follows. While the general view is that the oldest Siddhanta is the Surya Siddhanta, it is stated in the Sambhu Hora Prakasa that Soma Siddhanta is the first, Brahma Siddhanta is the second and that Surya Siddhanta is the third.

1. **Surya**
2. Brahma
3. **Vyasa**
4. **Vasishtha**
5. Atri
6. Parasara
7. **Kasyapa**
8. **Narada**
9. **Garga**
10. Marici
11. Manu
12. Angirasa
13. Lomasa
14. Pulisa
15. **Cyavana**
16. Yavana
17. **Bhrgu**
18. **Saunaka** or Soma

Daksha : He named the fixed stars! (Narrative)



Emergence of Daksha

Daksha waited outside looking at the sky, waiting for the sun to set. He loved the moment when the stars started twinkling into existence, at first one by one and later several at a time as daylight faded. He loved to look at the sky. There was nothing as beautiful and as precise and predictable as the sun and the moon and the stars. He was young, strong, handsome and very fond of his lovely wife, Prasuti. They called him Daksha, the dexterous! They said he was born of the thumb of Brahma. Daksha laughed., they just said any old thing. What if some fool were to take them literally? Brahma worried about that laughter. 'This one is just too confident of himself', he thought. 'They will think he is arrogant'.

"And who is "they"? father,' he would ask. " 'They', that think things and label people.. I have no time for such vague people or vague statements."

"Must be brother Manu," he thought. "I have never seen another being with views so rigid. He and Bhrgu! Always talking of ethics and purity and rules. So sure that they were better than everyone else! Actually, one had to concede that Bhrgu was a wizard of sorts.. he could cure people of anything and was not in the least scared of the muck that people had under their skin or the icky stuff that oozed out. And Manu was a legal wizard, and expert at sociology and principles that governed the behaviour of people. Sometimes though, he didn't see people as .. well human people!"

Prasuti laughed. "Careful when you criticise my father," she said warningly. "You are no bundle of humility!"

"Send my darling little Sati to me, I want to show her something", he told his wife. Daksha thought that his daughter Sati was the Devi herself. Brilliant, beautiful, insightful, gentle, brave and proud! None of that timid deference that other women were given to. She was fearlessness personified.

"Father, here I am", she said. 'Are you going to show me the stars again?' she asked happily. Daksha smiled a 'yes' at her.

"That there in the east is where the stars, sun and moon rise", he said, "and there in the west is where they set. And your grandfather Brahma showed me how the sun and the moon rise a little more towards the north every day for half the time and a little more to the south every day for half the time."

"I know!" yelled Sati. "And that there is Thatha's favorite star - Shravista (now called *Dhanishta*) towards the south". Daksha put on a serious expression. "I need your help to do a little project young lady!" he said. "First, for a whole month we are going to watch the moon, and we are going to watch which stars he is near and how much time he spends with each one. And we'll number them."

"No, we'll give them names" Sati said. "Alright, and we'll make a little model out of bamboo strips bent into perfect circles and stick little bits of clay to mark the special stars" said Daksha. "If I name the stars 'they' will call them my daughters", he sighed.

"But 'we' don't care what 'they' think, do we father?", she asked. "No, we don't", he said. Their project ran into several months as they made their model more and more accurate. The stars had to be bright, easy to distinguish and equally spaced along the north-south as well as along the east-west axes. Some stars were a little closer together and some were a little further apart. On some nights Bhrgu joined them. When her uncle Bhrgu came over, Sati used to point out the patterns she saw in the sky. "Do you see that goat's head? That star there is Asvini" she said. "And do you see that bull? It is my Siva who rides it, we call that star a Rudra, because it is reddish.."

Bhrgu turned to Daksha. "What is this talk of 'my Siva'?" he demanded. "She's a child," Daksha replied.

"Manu says that a girl is a young lady at 8 years" said Bhrgu. "You just made that up, you are the one who does all that biology stuff. Not Manu!" said Daksha.

Prasuti intervened, "Whoever said it, Sati is a young lady and you are not raising her like a girl. You keep her up late and fill her head with stars and numbers. She takes no interest in dressing and housework. How long do you plan to do this?"

Daksha said "Sati is Devi herself. When she sits next to me the heavens light up and so does my brain. I can think clearly and understand perfectly. Narry a cloud blocks my vision. Stars or no stars, she is not an ordinary girl".

After Bhrgu left, Prasuti spoke to Daksha, "When she is not talking stars and numbers to you, she is talking about Siva to everyone else, she has decided to marry him."

Daksha was in a dilemma. While he did not technically believe in jathis or races, he did not actually think his daughter would choose someone whose parentage was unknown and unknowable. What a headache! Manu would give him an earful. Manu and Bhrgu wanted what they called racial purity. They believed that the descendants of Brahma should keep together and marry only within the clan. There was no use to talking to them.

Daksha called on Vasishtha. " 'They' say you are born from the mind of our father Brahma", he said. Vasishtha laughed, " 'They' should be careful, some folks might take them literally," he said. "What they really mean to say is that I have understood his thought and wisdom in its essence, but 'they' like shortcuts, it makes it more poetic!"

Daksha spoke "I have a real issue. My daughter Sati has set her heart on Siva. They say that he has three eyes and lives in a cremation ground with snakes and other animals. He is definitely not one of us, not a brahmana. Manu won't like this." Vasishtha said, "It is not Manu's life. It is Sati's. You know that I am going to marry Arundhati. She is not a brahman either. Manu understands sociology – how most people can be made to conform to rules that will benefit the society as he understands it. But he does not appear to get psychology, how individuals feel and behave. We are not here to create a pure race. We are here to understand the divine."

He paused, then continued "By the way your little girl has been telling me all about your project. I think that if people aligned their life events to the stars, then life would be orderly, dates would be easy to remember and we would know which dates are luckier than others."

Daksha groaned, " Not you too. Our genius brother Bhrgu has started mapping out thousands of combinations of what he calls 'horoscopes', based on these star positions that I am working out. He is gathering data of everyone he knows and making predictions for everyone that may ever be born at any time. He says his daughter Sridevi is helping him with this".

The next day, there was a family debate. "Individual freedom and Aspirations Vs Social Order and racial purity." No one would grant the other's point. When Bhrgu tried to say something, they shushed him saying – "You believe in destiny and fate. What right do you have to debate when you don't even believe in free will?"

Prasuti spoke, "Racial purity will require controlling women ... and men for that matter. If a father has the ultimate right to gift his daughter to a worthy man, then she forfeits her right to marry the penniless man that she loves. It is against free choice".

Manu said, "Na Stri Svatantram Arhati – A woman does not deserve freedom". Prasuti got upset but did not wish to contradict her father. Then Sati spoke laughingly, "Yaa Stri Svatantram Chahati, Saa stri Svatantram Arhati! – That woman who desires freedom, deserves it!" Manu looked at Sati. When she spoke it wasn't like a human debating a rule. It was like a divine decree. She was like the Devi herself.

Daksa said, "Father, in a short time the sun will set and Sati and I have to work on our project. Prasuti won't let us work on an empty stomach. Let's discuss this some other time". Vasishtha and Sridevi, Bhrgu's daughter, also wanted to go with Daksha.

Bhrgu and Manu stayed back with Brahma. "They will think you are a bigot, Manu, you have to ease up a little." said Brahma.

Manu spoke, "But father, that is because 'they' never hear me out completely. Daksha does not even treat sociology like a proper subject. I am not talking of racial purity as they try to project. 'They' claim that I am talking about racial purity and then they force me to defend a stand that they project on me. Some fool might believe them."

He continued, "What I am talking of high specialisations, in mathematics, science, philosophy and engineering that will come if families dedicate themselves to a profession. Look at Daksha, he learnt Astronomical Siddhantam (*it is now called Pitamaha Siddhantam*) from you, his father and he is teaching his daughter now. Bhrgu and Vasishtha are learning from his observations and enhancing their work. That is community, family and clans working, whether are not Daksha and Vasishtha agree. Viswakarma and his family are brilliant with architecture, goldsmithy and city planning. I hear that he has made a bow for Vishnu, that has to be seen to be believed. If you allow our country to specialise in their professions on family lines, this will be the greatest of all countries. No one will hold back their knowledge from their darling children."

Brahma said, "I understand you. By the way, I have seen your work on time measurement. That is excellent. And your piece on ethics and law is brilliant. It is just the rules that you have made which curtail individual freedom that people resent. Happiness lies in self-determination. People want choice."

Manu said, "I don't care much for all that psychology stuff, Vasishtha goes ON about it, so. Individuals must restrain themselves and follow rules for the benefit of society. The well-being of an individual lies in the well-being of the country." Bhrgu looked at Manu with great admiration. He said, "I guarantee that my children and their children remember every word you say. I will train them to make any sacrifice for the well-being of this country."

At Daksha's place, Sati had taken upon herself the role of the official spokesperson of their project. She showed Sridevi, the pole star that had never moved in all their months of observation. "We call it Dhruva, the firm", she said. "Uncle Vasishtha says that it can be attained only by a person of great and unflinching resolve to a noble cause."

As the stars appeared at different times on different nights, she would point them out. One day she pointed at Auriga. "We name that one after Thatha, our grandfather, Brahma." she said. "Uncle Vasishtha!", she called, "Can you see those seven stars? The second one there, we named after you. We have named one after Arundhati aunty as well, there near the kruthika cluster (*Pleiades*)".

After the 'project time' was over, Sridevi and Sati would go off by themselves. "My father is going to give me to Vishnu in marriage," said Sridevi delightedly, "What about your story? Any luck?"

Sati said, "Easy! From tomorrow, I don't eat, till I get my way. If I so much as skip breakfast, mother will bring more pressure to bear on father than he can handle. He will land up at Siva's door and offer my hand in marriage".

It was as Sati said. Daksha found himself asking Nandi for a meeting with Siva. As Siva came up to greet him, Daksha was struck by his brilliant good looks and radiance, that no amount of ash or snakes could hide. "If /was this good looking, I would not care about a bath or ornaments either, he thought. "Where is that 'third eye' they talk about? The one that shoots fire?" he asked directly, without any preamble.

Siva laughed heartily. That wondrous, joyous laughter rang around the hills and valleys. The sun shone brighter and gentler, the winds became fragrant and Daksha was transfixed by Siva's twinkling eyes. At that minute, he knew, deep in his heart, without really knowing why, that Siva was the right one for Sati. Nature herself reflected their moods. This was no ordinary man. It was an insult, an anachronism to ask such a man about his parentage or his eligibility.

Siva spoke, "The third eye they speak about is my gnyananethram – eye of knowledge. I am an expert in Yoga and detached from the duality. So I can think clearly and can accept the truth, which is there for all to see. 'They' are blinded by their preferences and so do not accept the truth which their eyes and mind reveal. So rather than calling themselves prejudiced, they like to say that I have a third eye."

"Please marry my daughter", Daksha said urgently. "She is fasting and is adamant about marrying you. She will have none other. I am helpless against her will. And now that I have seen you, I know she is right."

"I will come with you right away," said Siva.

At Daksha's place, Siva saw the model they had made and understood what they were trying to do.

Sati came out and said directly, " 'They' call this the DakshaYajna. Everyone one I know has been to see it. In my family any long and difficult task is called a Yajnam. And we have been doing it for months". Siva smiled at Sati, "I see your father is right about you, anyone would be helpless against your will. And I can see where you would not give importance to the same things that other girls give importance to." Sati smiled back, " 'They' see the form and not the substance, I see both." "Will you have me for your wife?". Siva laughed his wondrous laugh again. "So, I am not to be allowed the privilege of asking your father for you. Yes, of course I will marry you. I have never met a woman, who wished to live near cremation grounds, covered with ash and surrounded by animals and hill-folk, who spends most of his time in Yogic Dhyana (*contemplation*)."

Vasishtha heard about Siva's visit and rushed to Daksha's place, touched his feet and sought his blessings. "I hear that you have accepted my brother's daughter. We are

blessed for eternity.” Daksha was surprised. Vasishtha as oblivious to Daksha’s mood, “I am planning to compose a work called the Yoga Vasishtham. I am composing some Veda Mantras, which not only praise the Sun and the Ocean, **but which also encode all the astronomical discoveries of my brother Daksha and my father, Brahma**. I am working on a system of auspicious muhurtams or lucky times. Anyone who commences his work at those instants of celestial alignments will be sure to succeed in their endeavours. I am talking to Agni and others and learning all the histories of times past. All I needed was a darshan (sight) of you, to untangle all my ideas, into clear streams of thought and expression. They say that not only do you have all the answers, but you are all the answers. I and all my descendants are forever blessed”.

Daksha was surprised, “Does one bow to one who is younger? Or to the one who gifts his daughter in marriage?”. He shook his head, “I am thinking like Manu now. If Vasishtha does it, it must be right, though I can’t understand half the things he says”.

“O Sati, what will happen to our project, now that you are off getting married?” Daksha said sadly. “Manu does say it is a waste educating girls. When they get married, they go away, unlike sons who stay on”. Sati laughed, “I believe that the girl going away is also a rule made by the boys. Don’t worry, my uncles Vasishtha and Bhrgu, want us to wait till UttaraPhalguni Nakshatram (*Denebola/Zavijaya*). Siva will help us finish the project by then.” Daksha gave a smile and said, “Vasishtha thinks that we *should order* our lives as per celestial movements. Bhrgu thinks that our lives *are already ordered* as per celestial movements. But they joyfully work together without appearing to see the essential, logical contradictions in their views.” Siva was a godsend as far as Daksha was concerned. He understood without speech. He helped make a more robust model, than what Sati and he had managed till then. He understood things like wheel balancing and centre of gravity. He suggested adding small paddles to the wheels so that the wheels could be turned by water. Manu’s time measurement devices were very useful in making a scaled model. They could quickly simulate, what would happen months, or even years down the line. He never needed to sleep and they could work through the night and day. He suggested that Daksha take Viswakarma’s model and get it made out of gold.

Everyone still called it Dakshayajna. Sati felt that Siva should get a share of the credit too and talked to her father. Siva sensed that Daksha wanted all the credit, it was “his” project from the beginning. Siva had only come in the end. It was not easy changing Sati’s mind. Finally, Siva said, “Let it go Sati, you and I know what all we deserve credit for. You never wanted any credit for yourself, then why for me? And your father is brilliant with his observations. I am just helping a little with the modelling. He has divided each nakshatra into 4 padas (*quarters*). He has added a circle for each pada. Now when the wheels turn you can see each pada of each star rise and set in turn. You can also see which nakshatra is rising when which nakshatra is setting. That really makes it easy for knowing daytime movements and positions.” Sati said, “Yes, now if only, we could add some horizontal circles showing how the sun and the moon move... Have you told him that we will be leaving for the Himalayas as soon as we get married? My grandfather Brahma, thinks that we rely too much on the mountains and oceans to guard us and it will be good if we ‘manned’ our borders.”

“No one has the courage to tell your mother, that will be your job”, said Siva.
“Himavantha and Menaka are very excited that you are coming, they look upon you as their own daughter, everyone their is waiting for their Parvathi Devi. The have heard and firmly believe that you are the Devi herself.”

Siva and Daksha were giving a final finish to the Dakshayajna project model. Daksha wanted to decide on a zero point. I have made a sort of imaginary star called Daksha (*Abhijit*) that overlaps with the end of Uttarashada. That can be the staring point he said. Siva did not agree. We’ll start with Aswini, the first star of Mesha, your goat’s head, he said. Daksha was said in mock anger. “My son-in-law, would you replace my head with a goats’s head?”

“Why, yes,” said Siva, “I would! It makes more seasonal sense. In fact, I would knock off your imaginary 28th Daksha Nakshatram completely and leave it at your original 27!”

Daksha shook his head,”Siva doesn’t care what ‘they’ will say. ‘They’ will say that my head has been replaced by a goat’s head. ‘They’ will draw morals from it and teach people not to be arrogant.”

“And they will never forget you or your achievements!” said Vasishtha. “Now, no one can look at Mesha or any of the 27 stars, without thinking of you!”

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Notes :

1. Manu was the author of the Manusmriti. The narrator is Bhrgu.
2. One of Bhrgu’s descendants was Chanakya, the author of Kautilya ArthaSastra. The Artha Sastra has borrowed some parts from the ManuSmriti.
3. Bhrgu authored the Bhrgu Samhita with includes sections on horoscopy as well as medicine.
4. The most famous Yajnanasanam was Daksha Yajnya Vinasanam. And the one who destroyed Daksha’s Yajnam was none other than Siva himself.
5. Siva was the God of the Asuras and Devas, the Devadeva.
6. In Sanskrit, the word Daksha means, right, skilled and south.
7. Daksha was also the name of a Prajapati, a son of Brahma appointed by Brahma to create Pra-jah (pro-creators). Daksha was a Prajapati. Praja means person and pati means lord. So Daksha was a lord of the people. Brahma made him a Prajapati along with some other Rishis.
8. ***As per wikipedia, Daksha was called the father of the 27 stars, because he was the astronomer who named them.***
9. Daksha’s daughter, Dakshayani, was called Sati. She was very fair, so she was also called Gauri. She fell in love with Siva and wished to marry him. The way to please Siva is through Tapas. So Sati did a very severe tapas, in which she did not eat as much as a leaf. So she was called Aparna. Siva was pleased eventually, but Daksha was not pleased at all. He performed the

marriage, but then would have nothing to do with his divine daughter and son-in-law.

10. When Daksha decided to perform a great Yajnam, he left Siva and Sati out on purpose. So Siva did not go and Brahma and Vishnu avoided the Yajnam as well. Daksha decided to go ahead any way.

11. When Sati heard about this, she begged Siva for permission to go. She thought that daughters did not need invitations to go to father's yajnas. Siva reluctantly let her go. Daksha was cold to Sati and said terrible things about Siva. Sati was very hurt and angry. She decided that she would be born again as the daughter of a father who loved Siva.

12. She created a magic fire with her toe-nail and disappeared in it. When Siva heard what happened to Sati he was both sad and angry. He sent Virabhadra and Bhadrakali to destroy the Yajnam. And he replaced Daksha's head with a goat's head!

13. Daksha Smriti : <http://www.urday.com/daksha.html>

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Daksha's head: Goat! Aries, Mesha!

Posted by **satyask** on December 10, 2008

Siva Puranam is full of astronomical significance.

This post talks about the astronomical significance of Daksha's story.

In Sanskrit, Daksha means 2 things – right, and south. This is because we are an east-facing people and not a north-facing people.

1. Siva is also called Vama Deva, Vama also means left in Sanskrit.
2. Siva (Arudra – first star of Gemini-mithuna) Rides Vrishabha (Taurus – the Bull).
3. Margasira Nakshatran, associated with Parvathi follows 'prati patthaye' Arudra, associated with Siva.

Siva replaced Daksha's head with a goat's head.

quick astronomy primer:

- The 27 nakshatrams are called fixed stars. It is with reference to them that the zodiac is defined. That is the sidereal zodiac.
- The closest star to the earth – our life-giver – is the sun!
- We move around the sun in an elliptical orbit, our earth's axis is at an angle to the plane of orbit and it 'wobbles'. This gives us the seasons and it also gives us the precession of equinoxes. That means that our seasonal changes the solstices and the equinoxes, shift slightly wrt the fixed stars.
- Since the sun is important to us – we say that it is the stars that are slipping by!
- We have fixed the tropical zodiac based on the sun.
- That means, the rasi or zodiac sign, that occurs from march 21 to april 19th, is Aries.
- That means that whatever rasi the sun is in during that time, that we define as Aries.
- Because of the slip due to precession, over a thousand years, different stars will form the 'Tropical Aries'.
- There fore the shape of the rasis change over time.
- Each rasi always has 2 and 1/4 stars, the first star of the first rasi changes continually.

The rasi that looked like a man's head?, started looking like a goat's head, because of different stars were around the sun at spring. That is the time of the Daksha Yajna nasanam.

More on Astronomy and Traditions

Why the number 108 is special

The number 108 is very special to Hindus. Ashtottara SataNama means 108 names. Sri Vishnu and most of the Devas and Devis are worshipped with 108 names. Some people have japamalas with 108 beads to help them keep count. There are 27 nakshatras (constellations) and each has 4 padas or quarters. This makes 108 padas in all.

Nakshtra Suktham (Devanagari)

Posted by [satyask](#) on March 19, 2010

<http://oldthoughts.files.wordpress.com/2010/03/nakshatra.gif?w=516&h=4469>

(Atharva Vediya) <http://manasataramgini.wordpress.com/2008/07/20/nakshatra-kalpa-suktam/>

Colours of Vishnu: Galactic Centre

Posted by [satyask](#) on October 11, 2008

<http://www.sacred-texts.com/hin/m03/m03188.htm>

SECTION CLXXXVIII = Mahabharata

In the *Krita* age I become white, in the *Treta* age I become yellow, in the *Dwapara* I have become red and in the *Kali* age I become dark in hue...

(... The black hole.. at the galactic centre... colour changes in a star...)

Sleeping with your head to the North

Posted by [satyask](#) on February 19, 2009

Sleeping with your head to the North, is generally ill advised in our tradition.

One of my thoughts is that this has something to do with the earth's magnetic field.

I read in the Scientific American that strong magnetic fields of about 2Tesla, 30,000 times stronger than the earth's magnetic field slowed the brain response down by 30%.

Maybe there is a cumulative effect of the low magnetic field that has not yet been investigated?

Note:

1. For the past three years I have noticed that bugs (bees and mosquitoes) and birds wish to enter my northern doors and windows and wish to exit through my southern windows. If I don't open the southern windows, they just stick around in there, near the window and will not go out the way they came.

2. *The Pharaohs were buried with their heads to the north and feet to the south as evidenced by their sacrophagi. There are also customs in India that associate sleeping with one's head to the North with death.*

3. *However it is auspicious to Pray with one's face to the east, north-east and north.*

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Ksheera sagara: Ocean of milk: The milky way

Posted by satyask on March 21, 2009

It is said that Vishnu (the galactic centre) lies on Adi Sesha (That which is left over (sesha) from the beginning, Adi), in the Ksheera Sagara (the milky way).

Ksheera sagara mathanam means churning of the ocean of milk. The **Devas** on one side and the **Asuras** on the other side pulled first one way and then another on a snake wound around the Manthara (Manthana means churning – Manthara is the stick used for churning?) mountain. The arms of the milky way, look to me like the two ends of the snake-rope that was used for churning.

As a result of this churning emerged all kinds of treasures, Amrutham (non-death) being the final wonder. Chandra (the moon) and Lakshmi (light) are easy to understand. What were the others. This ksheera sagara mathanam is connected in some way with **Sivarathri**. Because Siva swallowed the halahalam or poison on that day and Saivates fast out of concern. What could be the halahalam and what could be the amrtam?

Today we do not see the KalpaVrksham (the tree that grants wishes) or kamadhenu (wish giving cow) as a pattern in the stars, but could that explain them?

Vasishtha is one of the stars of the Sapta Rishi Mandala (Great Bear), he was said to be present at the Ksheera Sagara Mathanam.

I need to understand a little more astronomy and how the sky looks at night over the course of the year, to explain this better. Bangalore skies are not very co-operative, so I shall have to look at charts or something.

Devas and Asuras. Tripura

Posted by **satyask** on October 7, 2008

As per Siva Purana retold by Ramesh Menon.

I just finished this back yesterday.

Here are some interesting ideas that I found.

- Devas and Asuras (Step-Siblings) rule the world in turn for very long periods of time. The Asuras seize power through battle. The Devas are unhappy about this and are re-instated at the appropriate time" by Hari and Hara.
- Devas are the Gods of Light. Asuras are the gods of darkness.
- I think the sky looks different from time to time .. as the earth and sun move through and with the galaxy. This could have to do with the Devas and Asuras alternating control of the worlds.
- Many of the Asuras ruled wisely and well and people were equally happy in their reign as in the reign of the Devas.

Tripura:

The three asuras built 3 cities, one on earth, one in svarga and one in patala. These align once in a thousand years in Pushya Masa. (This lunar month).

Then Siva destroys them with a single arrow.. riding on a chariot made of time with a bow that sounds like sagittarius or Dhanus (Bow).

I think Arudra (in Taurus/ Vrishabha) lines up with the stars that represent the arrow in Dhanus.. and those point to Swarga, Bhumi and Patala.

The 14 worlds:

These are PERPENDICULAR to the plane of our galaxy. 7 "above" and 7 "below". From Vishnu Nabhi (navel) – which is the centre of our galaxy emerged a huge stalk at the end of which was a lotus in which Brahma sat. (Satya Loka is Brahma's world). Imagine a quasar with matter bursting out from

the centre in both directions, with worlds at various levels. We know that our galaxy is at an angle to the part of the universe that we are in. It should be possible to identify the 14 worlds. (satellite galaxies?)

Parvati: Was also born in Margashira masa.

Halloween, Karthika Pournami, Yama Deepam

Posted by [satyask](#) on October 31, 2009

The theme of lights and overcoming fear of death dominates festivals around the world during Karthika Masam.

- *I compare the dates and customs of Halloween, Karthika Pournami and Yama Deepam in the following article.*
- *It is possible that Ancient Indian customs spread to many parts of the Ancient World and were later suppressed/modified there under the label of Paganism.*
- *At one time Halloween coincided with Karthika Pournami.*
- *(See Also : Harvest Moon : Aswiyuja Pournami (Purnima))*

Halloween : Americans celebrate Halloween on the **31st of October**. Children dress up as ghosts (prethas) and monsters and demand sweets from neighbours. Pumpkins are carved and candles are placed in them. (Jack O' Lantern)

- According to **this reference**, Hebrews followed a lunar calendar. Halloween was instituted on the full moon of the eighth month (October). On that day they sacrificed to the golden calves at Dan and Bethel.
- "God ordained, in **Leviticus 23**, the Feast of Tabernacles **on the fifteenth of the seventh month. I Kings 12:28-3228** After seeking advice, the king made two golden calves. He said to the people, "It is too much for you to go up to Jerusalem. Here are your gods, O Israel, who brought you up out of Egypt." 29 One he set up in Bethel, and the other in Dan. 30 And this thing became a sin; the people went even as far as Dan to worship the one there. 32 He instituted a festival on the **fifteenth day of the eighth month**, like the festival held in Judah, and offered sacrifices on the altar. This he did in Bethel, sacrificing to the calves he had made. And at Bethel he also installed priests at the high places he had made. (NIV)"
- *Westeners used to begin their new year with the winter solstice at one time as opposed to the spring equinox new year traditions of South Indians. Today their new year day Jan 1st is separated by 9 days from the winter solstice, so we know how relatively young this calendar is, compared to the Indian calendars. (See : **Equinoxes and Dating the Vedas***
- *For October (Akhtabar – Ashtavar(sha)) to be their 8th month, the first month has to be March. This implies at the their new year also started at the Spring Equinox, as it does for the Andhras, Kannadigas and Tamilians (and some other Indian States), at the time of the Old Testament.*
- *The Biblical Reference above shows that the full moon was the 15th day, which means that like Andhras and Kannadigas (and some other Indian States), they started their calendar on the new moon day when the sun and the moon were aligned.*

Karthika Pournami : Andhras (and Indians of some other states) celebrate Karthika Pournami in a big way on the full moon day of lunar month Karthika Masa. Karthika Masa is named after the Kruthika Nakshatram (called Pleiades). The Krutika Nakshttram is a constellation of 6 stars called the Krttikas and the adopted son Karthikeya (son of **Siva**), whom they all raised together. It is Karthikeya who killed Tarakasura and returned **Indra's** kingdom to him.

- Karthika Masam is named after Kruthika Nakshatram, because, on an average, the full moon day occurs closer to Kruthika than the other 26 Nakshatrams. This usually occurs in the english calendar month of November.
- ***This year Karthika Pournami is on 2nd November*** and occurs in Ashwini Nakshatram which is 2 nakshatras away from Kruthika.
- On the day of the Kruthika Nakshatram in Karthika Masam, the festival of **Kruthika Deepotsavam is observed – this is on 4th November this year!**
- "The Seven Sisters constellation, Pleiades, which looks like a small cluster of grapes, **has long been a signal for the time of year to honor the dead – such as All Saints Day, Nov. 1.** According to myth, the Seven Sisters constellation is at its highest point in the sky during a great calamity. The Aztecs and Mayans believed it would be overhead at midnight on the night the world comes to an end."**(Reference)**
- What is a good day to the victors (Karthikeya and the Devas) might well be a bad day to the losers (Tarakasura). Could this be a clue?

(For posts by me explaining the lunar calendar please see : **Nakshatram of the Day!** , **Nakshatras and Masas**)

Yama Tharpanam and Yama Deepam : Yama is worshipped on different days of Karthika Masam and one or 2 days preceding it.

My calendar gives the day before Deepavali (Aswiyuja Krishna Paksha Chaturdasi as Yama Tarpanam, Naraka Caturdasi, Preta Caturdasi and Yama Deepam) and Karthika Krishna Paksha Trayodasi as Yama Deepam. Expect variations from state to state.

- Yama Dharmaraja is revered the luminary (deva) in charge of Yama (Restraint and Self-Control) and Dharma (Ethics, Right Conduct etc). He is popularly known as the God of Death or Mrutu Devata in contemporary Hinduism. At the end of your life, it is believed that, Yama reviews the account of your activities and decides how much time you get in heaven and how much time in each kind of hell. Yama is worshipped to overcome the fear of death.
- Yamadwithiya / Bhathru Dwithiya: As the legend goes Yamraj, the God of Death visited his sister Yamuna (Yami) on this particular day. That is why this day of Bhayyaduj is also known by the name of "Yama-Dwitiya" or Bhathru Dwithiya. (**Source**)

In Andhra, sisters give Arati to their brothers on Naraka Caturdasi. Variations of this custom occur in various states of India, both north and south.

For other posts written by me on the spread of Ancient Indian Customs (*Brahmins to Hebrews*) you may see links below: (These are not connected to Karthika Masam.)

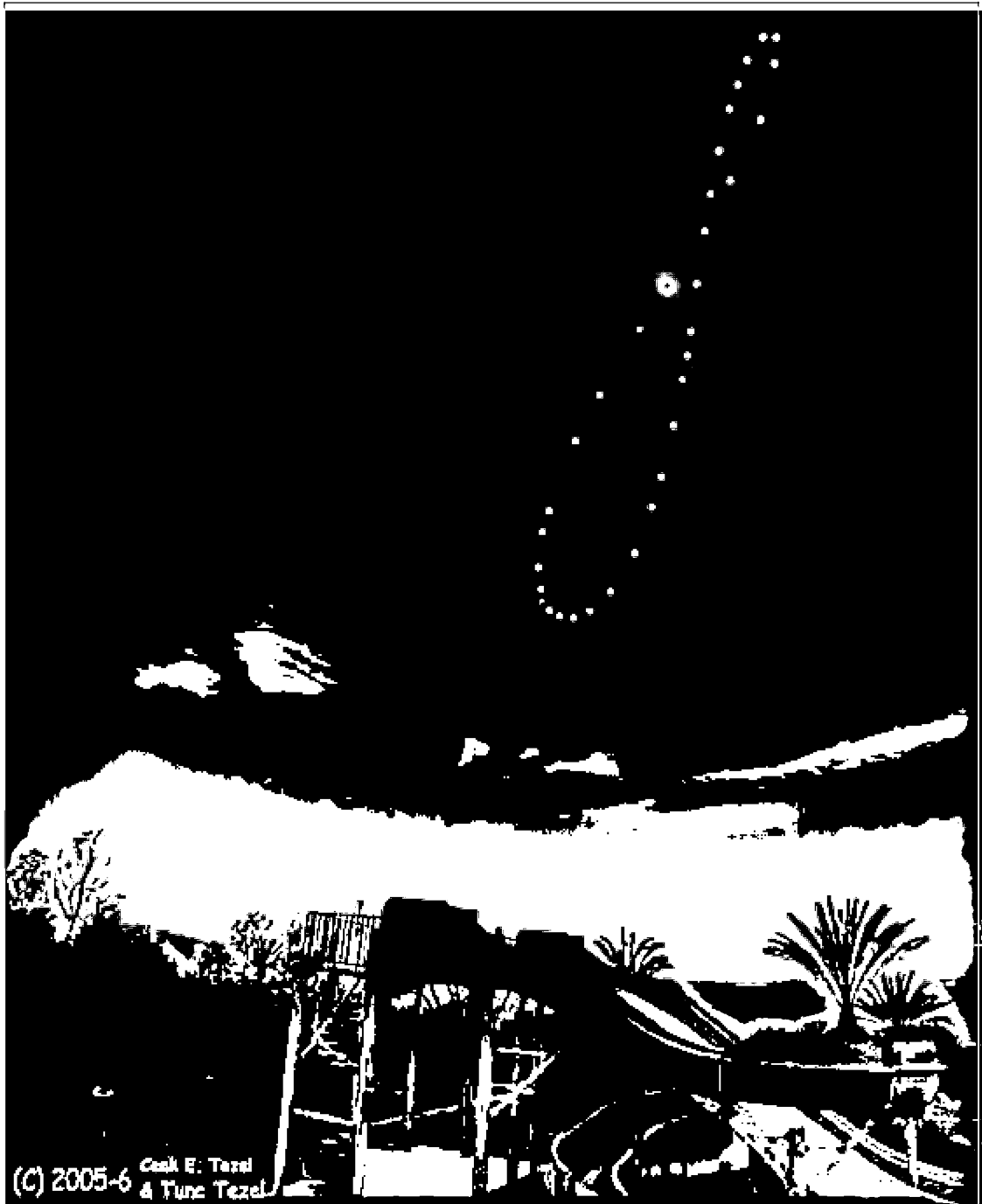
- From Ganga-Saraswathi to Sumer to Jerusalem
- Sumeru
- Jewish and Brahmin temple customs
- Meaning of Yehovah, Yeshua
- Etymology : Allah, Elohim, Eloah, Ila, Brahman
- Hell Hellenistic Greece Helios
- Svarga, Naraka, Paraloka
- Bhavishya Purana references Adam (Adama) as the son of Vishnu Kardama. It records a meeting of Jesus (*Isa - Masiha*) and Salivahana.

The Earth's Wobble, Eclipses and Indian History

Uttarayanam: Shift from Makara Sankramanam to Dhanur Masam

Meaning of Uttarayanam:

- The moon traverses 27 **nakshatras** in one lunar month. The sun traverses 27 nakshatras in one year.
- If you live in the Northern Hemisphere: Look towards the east every morning, and you can see that the sun rises in the general direction of the east, but a little more to the north and slightly sooner everyday after the winter solstice, and a little more to the south everyday and slightly later after the summer solstice. **Twice a year, the sun rises exactly in the east.**
- Uttarayanam or Uttarayana Punya Kalam is the period during which each sunrise is just a little more to the north. Similarly Dakshinayanam is the period during which each sunrise is just a little more to the south.
- Traditionally, we celebrate Uttarayanam from Mid-Jan to Mid-July and Dakshinayanam from Mid-July to Mid-Jan.



Tutulemma: Solar Eclipse Analemma Credit & Copyright: Cenk E. Tezel and Tunç Tezel (TWAN)
(APOD, NASA)

*The day on which the sun 'changes direction' and starts rising towards the north, is called the **Winter Solstice, Uttarayanam**. This was the day that **Bhishma** was waiting for, so that he could leave his mortal coils.*

Meaning of Makara Sankramanam:

The day when the Sun traverses from the first pada (quarter) of Uttarashada Nakshatra to the second pada (quarter) of the Uttarashada Nakshatra is called Makara Samkramanam (entering Capricorn.)

See Also : **Moola Karthe, Dhanur Masam, Sri Maha Vishnu**

Date of the Uttarayanam now and then:

- At one time Uttarayanam and Makara Sankramanam occurred on the same day.
- Nowadays, **the Winter Solstice, no longer corresponds to Makara Sankramanam.**
- The Winter Solstice (Real Uttarayanam) takes place on the 22nd or 23rd of December. And Makara Sankramanam occurs in the middle of January.
- **The solstices, 'slip' past the nakshatrams at a definite rate. This is called the precession of the equinoxes.** (The equinoxes are the days on which days and nights are of equal length. The solstices are days on which the sun changes its north-south direction.)
- The equinoxes and the solstices define our seasons, spring, summer, autumn and winter and are therefore important for seasonal celebrations.

Let us say that Dec 22nd, you wake up at sun rise and note down which constellation (nakshatram), the sun points to. Next year, same day, same time, you will find that the alignment is off by 50.3 seconds of arc. 71.6 years later, you will find that your measurement is off by a whole degree, and that you are closer to the previous nakshatram. It will take 25,700 years, for your descendants to see the same alignment that you did.

Some Very Very Rough Arithmetic: Part 1:

1. The equinox shifted from Jan 14th to Dec 22nd – 22 days approximately.
2. Therefore the equinox that is supposed to take place when the sun is aligned with Uttarashada Second Padam, now takes place 22 days/365 days * 27 nakshatrams * 4 padams/nakshatram = 6.5 padams earlier.
3. That is it takes place when the sun is aligned with Moola Nakshatram 3rd Padam.
4. ie, it takes place in **Dhanur Masam**.

Some Very Very Rough Arithmetic: Part 2:

1. In 1 year the equinox shifts by 50.3 seconds.
2. **To shift by $22/365 \times 360$ degrees, ie 21.7 degrees, it takes : $21.7 \text{ degrees} \times 3600 \text{ minutes per degree} / 50.3 \text{ seconds per year} = 1553 \text{ years}$.**

When did Uttarayanam and Bhishma Ekadasi coincide?

Quoted From : **<http://www.ias.ac.in/currsci/dec252005/2174.pdf>**

"It is stated that Bhishma died on Maga S 8 on the winter solstice day, i.e. at the start of Uttarayana. At present, this tithi occurs between 20 January and 20 February, which differs from the date of

winter solstice, 22nd December, by 29 to 60 days. This difference is caused by the precession of the earth's axis around the ecliptic poles in the retrograde circuit in 25,725 years, as stated earlier. It causes a slow backward shift of equinoxes and solstices with respect to the nakshatras and the lunar months at the rate of one day in 71 years. As it would take 2060 to 4260 years to produce a shift of 29 to 60 days, the date of Bhishma's death would be 1200 ± 1000 BC. This date can be pushed back to the Krttikâ epoch of 2300 BC, if we put the beginning of Dhanisthâ exactly opposite to Maghâ (Alpha Leonis)."

Uttarayanam and Christmas coincided approximately 2000 years ago: Quoted from:

<http://www.dattapeetham.com/india/talks/christDatta.html>"

"In december the sun will be in Dhanus Raashi (Sagittarius). On 14th January every year sun moves to the next sign i.e. Makara (Capricorn). From that day (14th January) the period of Uttaraayana commences (Uttarayana is the period from 14 January to 14 July). The commencement of this Uttarayana happens on January 14th in the system of Nirayana only (Sidereal calculations). **But in Sayana system (Tropical calculations), Sun starts his Uttarayana period in the last week of December.** The system of Sayana observes the movement of sun and corroborates and finalises the astrological calculations on sun. Presently, this movement of Sun to Uttarayana happens either on 22nd or 23rd of December. But about 2000 years ago (possibly when Jesus was born) this change used to happen on December 25th every year."

Precession of Equinoxes and Dating Vedas

Posted by satyask on February 23, 2009

A. There are 4 special days in a tropical year.

1. Winter Solstice : Starting of Uttarayanam
2. Spring Equinox: Ugadi
3. Summer Solstice: Starting of Dakshinayanam
4. Autumn Equinox.

B. There are 27 nakshtras as given below.

Nakshatra	No. of stars	Alternate name	Dedicated to
Krittika	6		Agni
Rohini	5		Prajaapati
Mrigasheerisham	3		Soma
Aardharaa	1		Rudra
Punarvasu	2-4		Aditi
Tishya	3	Pushya	Brihaspati
Aaslesha	1	Ashresha	Sarpa
Maghaa	5		Pitru
Poorva Phalguni	2	Pubba	Bhaga
Uttara Phalguni	2	Uttara	
Hastaa	3		Savitru
Chitra	1	Chitta	Indra
Swati	1		Vaayu
Vishaaka	2		Indraagni
Anooradha	4		Mitra
Jyeshta	3		Indra
Vichruta	11	Moola	Pitru
Aashada	2	Purvashada	Aapah
Aashada(Abhijit)	3	Uttarashada	Vishvedeva
Shrona	3	Shravana	Vishnu
Shravishta	4	Dhanishta	Vasu
ShathaBhishaja	100		Indra

Proshtapada	2	Purvabhadra	
Proshtapada	2	Uttarabhadra	Ahirbadhni
Revathi	32		Pausha
Ashwini	3		Ashwini
Bharani	3		Yama

C. The earth takes 365.25 days to cover 360 degrees: one full orbit around the sun.

This is our tropical year. In one day the earth covers 0.9856 degrees nowadays. Since the earth is slowing down, there was a time in our past when the earth took only 360 days for a revolution. (How long ago was that? I don't know right now).

D. The earth wobbles on its axis.

If we take the stars as our fixed frame of reference, then the year is a small fraction longer than our tropical year. This is called the sidereal year. **Every tropical year we are short of the sidereal year by 50.3 seconds.** (Or almost a minute).

Roughly every 60 tropical years we are short of the sidereal year by 1 degree. (more exactly every 71.6 years we are short of the sidereal year by a degree). We follow a 60 year cycle, in which each year has a name. Roughly every 60*360 years (21600 years), we are short by 360 degrees and we have come a full cycle. (This would be more exactly every 71.6*360 ie 27776 tropical years)

60 year cycle: 1. Prabhava 2. Vibhava 3. Shukla 4. Pramoda 5. Prajāpati 6. Āngirasa 7. Shrīmukha 8. Bhāva 9. Yuva 10. Dhātri 11. Īshvara 12. Bahudhānya 13. Pramāthin 14. Vikrama 15. Vrisha 16. Chitrabhānu 17. Svabhānu 18. Tārana 19. Pārthiva 20. Vyaya 21. Sarvajit 22. Sarvadhārin 23. Virodhin 24. Vikrita 25. Khara 26. Nandana 27. Vijaya 28. Jaya 29. Manmatha 30. Durmukha 31. Hemalambin 32. Vilambin 33. Vikārin 34. Shārvari 35. Plava 36. Shubhakrit 37. Shobhana 38. Krodhin 39. Vishvāvasu 40. Parābhava 41. Plavanga 42. Kīlaka 43. Saumya 44. Sādhārana 45. Virodhikrit 46. Paritāpin 47. Pramādin 48. Ānanda 49. Rākshasa 50. Anala 51. Pingala 52. Kālayukti 53. Siddhārthin 54. Raudra 55. Durmati 56. Dundubhi 57. Rudhirodgārin 58. Raktāksha 59. Krodhana 60. Akshaya (22nd year – Sarvdhari. 5109 Kali Yuga)

E. The 4 special tropical year days, occur at different times on each sidereal year. This is the precession of equinoxes.

There are 27*4 = 108 Nakshatra padas. The sun 'steps' through each of these padas over the course of the 360 degree (27776 tropical years) cycle. Each Pada is 3 deg and 20 min., that is 200

min. It takes the sun $200 \times 60 / 50.3 \sim 240$ years to step through a pada. or 960 years to step through a nakshatra.

In very rough terms, this means that an equinox or solstice will occur at the immediately previous nakshatram about 1000 years later.

F. Examples:

Let us say that, when reckoning began, that the spring equinox was in Krttika Nakshatram. And that it is in Ashwini Nakshatram today. That means the sun has stepped through 2 nakshatrams, which implies roughly 2000 years ago.

Let us say that when the reckoning began, the winter solstice was in Krttika Nakshatram and now it is in Moola Nakshatram, then that means the sun has stepped through 11 nakshatram which is about 11000 years ago.

G. Dating.

We know where the equinoxes and solstices are today with respect to the fixed stars. If we know where the equinoxes and solstices were then with respect to the fixed stars, then we have a date.

Based on their interpretations of the Vedas and Scriptures and our customs now and then, various astronomers have given us different dates for the Vedas and the scriptures.

Since the Vedanga Jyotisha starts with Krttika as the first star, we think that one of the important tropical days would have coincided with it. Which is that important date and what does it give us for the antiquity of the Vedas?

A Personal Tentative Thought:

Many Indian scholars accept the traditional date of 5109 years ago as the beginning of Kaliyuga and the death of Sri Krishna. ie 3100 BCE. Based on brahmin lineages, **I have argued that Rama was two generations prior to Krishna** and the Vedic scholars were at least one generation prior to him. Viswamitra who composed the Gayathri Manthram was a teacher to Sri Rama when he got married to Sita Devi. This would give us about maybe 3500 BCE for the Gayathri Mantram.

If we take it that the winter solstice occurred in Revathi Nakshatram in Vedic times and that it slipped back to Moola Nakshatram now, I am looking at a date of roughly 8000 years ago or about 6000 BC. (There are other scholars who give this date.)

If we take it that the winter solstice occurred in Dhanistha Nakshatram in Vedic times and that it slipped back to Moola Nakshatram now, I am looking at a date of roughly 4000 years ago or about 2000 BC. There are many people who believe that the Harappan civilization was about 2000 BCE.

Data below quoted

from: http://www.himalayanacademy.com/resources/books/dws/dws_r6_timeline.html

Posted by **satyask** on March 12, 2009

- **-10,000** *Taittiriya Brahmana* 3.1.2 refers to Purvabhadrapada *nakshatra's* rising due east, a phenomenon occurring at this date (Dr. B.G. Siddharth of the Birla Science Institute), indicating earliest known dating of the sacred *Veda*.
- **-8500** *Taittiriya Samhita* 6.5.3 places Pleiades asterism at winter solstice, suggesting the antiquity of this *Veda*.
- **-6776** Start of Hindu king's lists according to Greek references that give Hindus 150 kings and a history of 6,400 years before 300 BCE; agrees with next entry.
- **-6500** *Rig Veda* verses (e.g., 1.117.22, 1.116.12, 1.84.13.5) say winter solstice begins in Aries (according to D. Frawley), giving antiquity of this section of the *Vedas*.
- **-5500** Date of astrological observations associated with ancient events later mentioned in the *Puranas* (Alain Danielou).
- **-3928** July 25th: the earliest eclipse mentioned in the *Rig Veda* (according to Indian researcher Dr. Sri P.C. Sengupta).
- **-3200** In India, a special guild of Hindu astronomers (*nakshatra darshas*) record in Vedic texts citations of full and new moon at winter and summer solstices and spring and fall equinoxes with reference to 27 fixed stars (*nakshatras*) spaced nearly equally on the moon's ecliptic (visual path across the sky). The precession of the equinoxes (caused by the mutation of the Earth's axis of rotation) makes the *nakshatras* appear to drift at a constant rate along a predictable course over a 25,000-year cycle. Such observations enable specialists to calculate backwards to determine the date the indicated position of moon, sun and *nakshatra* occurred.

- **-3139** Reference to vernal equinox in Rohini (middle of Taurus) from some *Brahmanas*, as noted by B.G. Tilak, Indian scholar and patriot. Now preferred date of *Mahabharata* war and life of Lord Krishna
- **-2500** Reference to vernal equinox in Krittika (Pleiades or early Taurus) from *Yajur* and *Atharva Veda* hymns and *Brahmanas*. This corresponds to Harappan seals that show seven women (the Krittikas) tending a fire.
- **-2350** Sage Gargya (born 2285), 50th in Puranic list of kings and sages, son of Garga, initiates method of reckoning successive centuries in relation to a *nakshatra* list he records in the *Atharva Veda* with Krittika as the first star. Equinox occurs at Krittika Purnima.
- **-1424** Mahabharata War occurs (dated from reference in the *Mahabharata* citing winter solstice at Dhanishtha, which occurs around this time). (conflicts with the 3139 BC)
- **-1255** King Suchi of Magadha sets forth *Jyotisha Vedanga*, dating it by including an astronomical note that summer solstice is in Ashlesha Nakshatra.
- **-850** The Chinese are using the 28-*nakshatra* zodiac called Shiu, adapted from the Hindu *jyotisha* system."

Date of Veda Mantras

Reference 1 : *History of Astronomy in India*: Sen and Shukla : Indian National Science Academy : National Commission for the Compilation of the history of sciences in India 1985

1. A survey of source materials : Prof. K.V. Sarma, Formerly Director, Visvesvarananda Vedic Research Institute, Hoshiarpur, Punjab.

The harbingers of the autumnal equinox are given in different mantras of the Rig Veda as,

- Aditi (Punarvasu, Pollux 113 long) : ~ 6200 BC/BCE
- Daksha (Abhijit, Vega, 284 long) : ~ 5400 BC/BCE
- Rudra (Ardra, Betelgeuse, 88 long) : ~ 4350 BC/BCE
- Rohini (Aldebran, long 69 deg) : ~ 3070 BC/BCE

(* Rough calculations done by Sri Sarma using 72 years per degree approximately : 27 Nakshatras – 360 degrees ~ 13.33 deg per nakshatra ~ 960 years: Depending on which point of the star, beginning, end or middle was meant there can be an **offset not exceeding 500 – 1000 years** in

*the dates given. So based on other data such as the **date of the Bharata War** , we have to fine tune the offset error.)*

R.V : 3.99 : Krittika is the autumn star c 2350 BCE (assuming a 1000 year offset error, we are looking at 3350 BCE – which better correlates with the date calculated for the Bharata War)
Viswamitra

R.V. 1.164 Autumn Star Agni (Krittika, Alcyon 59.5 long) : Dirgha tamas.

R.V. 5.40-49, the total eclipse of the sun determined by P.C. Sen Gupta as 3298 BCE.

The RV references do not seem to be mandala suktha mantra but some other numbering... so I can't verify them at this instant...

Ancient Indian Astronomy : Precession and Dates : Frawley

Posted by [satyask](#) on November 20, 2009

Reference : Gods, Sages and Kings. Vedic Secrets of an Ancient Civilization by David Frawley

For use with our future discussions on this subject, I am jotting down a few points from this reference.

1. Today we hear of the dawning of the "Age of Aquarius". The point of the vernal equinox – the position of the Sun among the stars on the first day of spring – is approaching the sign of Aquarius (Kumbha).
2. This phenomenon is caused by a backward tilting of the earth on its axis, the precession, which changes at the rate of about 50" per year and completes the whole cycle of the zodiac in about 25,800 years.
3. The astronomy of India has always been sidereal, based on stellar positions, unlike the west which employed a "Tropical" zodiac based on seasonal points.
4. Most Indian astronomers place the vernal equinox around 23 degrees from 0 degrees Aries, as of 1950. ie 7 degrees of Pisces.
5. While the greek Hipparchus calculated the rate of precession as 36" per year, the Surya Siddhanta calculated the rate at 54" which is much closer to the modern measurement of 50.3" per year.
6. Precessional changes are the hallmark of Indian Astronomy.
7. A sidereal day is 4 minutes shorter than a regular day and therefore there are 366 sidereal days in a normal year. Thus the precession is built into the Indian calendar.
8. Any culture employing the sidereal zodiac will find the position of the equinoxes moving back a week or so every 500 years or about 7 degrees in the zodiac.
9. Today, Hindus celebrate the Sun entering the sign of Capricorn around Jan 14th as this is the observable sidereal position, and western tropical calendars use Dec 21st as the date of the western solstice.
10. Hindu Sidereal calculations are more complicated than tropical ones. Indian astronomy is a very specialised system that requires precise astronomical observations and shows an ongoing knowledge of the exact placement of the planets and equinoxes relative to the fixed stars. many Vedic rituals are described relative to sidereal calendars.
11. About every 1000 years, the equinox is moved back another nakshatram (lunar constellation).
12. The nakshatram after which each month (masa) is named, mark the beginning of their respective signs.
13. The Hindu months were devised according to a correspondence between nakshatras and the zodiac, revealing a knowledge of both systems.
14. In Ancient Indian Texts, the nakshatras are listed in the order of their sequence starting with the constellation that marks the spring (vernal) equinox. Medieval lists begin their listing of the nakshatras with Ashwini. Ancient lists started with Krittika, showing the equinox at the beginning of taurus.
15. Whenever the equinox retreated back to a previous sign and therefore a previous month, a major calendar reform was initiated. (We can find various texts and tables in use even today).
16. Eras when the equinox came to an initial point of one of the 12 signs were more prominently marked in Vedic texts than the intermediary points.
17. For the purpose of Vedic Yajnas, the year began with the winter solstice when the sun was "renewed".

18. The first month of the year therefore becomes, the one named after the nakshatram that marks the full moon on the winter solstice day.
19. Vedic literature tells us some of the months named by these lunar constellations (nakshatrams) and the days within them in which the solstices occurred, affording us additional means of calculating these eras.

Unique eclipse pair combination just before the Bharata War!

Posted by **satyask** on March 12, 2009

Notes Quoted from : "<http://www.boloji.com/astro/00325a.htm>"

1. Surya Siddhanta states that sun was 54 degrees away from vernal equinox when Kaliyuga started on a new moon day, corresponding to February 17/18, 3102 BCJ, at Ujjain (75deg47minE 23deg 15min N).
2. Varaha Mihira stated that 2526 years before start of Saka count [Brihat Samhita Ref-3] as per text below: When Saptarishis (ursa major) was near Magha Yudhistira was king 2526 years before Saka time
3. Presently, traditional Sanatana Dharma followers consider that Kaliyuga started at 3102 BCJ, when Sri Krishna passed away, and that Mahabharata war occurred in 3138 BCJ. Millennium year 2000 AD is Kali 5102
4. The Bhishma Parva and Udyoga Parva (specific chapters of Mahabharata) provide considerable astronomical/astrological descriptions and omens as the Mahabharata war was approaching. It describes a period of draught, with many planetary positions.
5. Then there is this clear reference to pair of eclipses occurring on 13th day as shown below. Fourteenth day, Fifteenth day and in past sixteenth day, but I have never known the Amavasya (New Moon day) to occur on the thirteenth day. Lunar eclipse followed by solar eclipse on thirteenth day is in a single lunar month etc.....
6. Mahabharata text also refers to retrograde motions of planets prior to war and provides their location with reference to 27/28 Vedic star locations. Mahabharata Drona Parva also refers to Jayadratha's killing during a dark episode on 13th day of the war, which some consider as another short solar eclipse.
Analysis of all eclipses visible at Kurukshethra (Location where Mahabharata war took place, north of New Delhi, Longitude 76 deg 49 min East, Latitude 29 deg 59 Min North) from 3300 BC to about Buddha-Mahavira-Parshvanaatha time of about 700BC. Analysis of the time between successive eclipses, specifically time between end of one and beginning of other has been made, with a view to look at astronomical feasibility of back-to-back eclipses in 13 days, using modern astronomical computer software.
There are about 150 lunar eclipses per century. During period 3500BC to 700 BC, nearly 4350 lunar eclipses have probably occurred.
7. About 240 solar eclipses occur every century. During period 3500BC to 700 BC, nearly 6960 Solar Eclipses have occurred.
8. Astronomical calculations have been greatly improved since past 30 years, particularly with considerable amount of trajectory work conducted in Moon and other scientific projects. High accuracy computer models and software have been developed. These are validated against databases from US Naval Observatory's Interactive computer Ephemeris, and Jet Propulsion Laboratory in California. One such code is LodeStar Pro copy righted by Wayne C Annala in 1994 [Ref- 7]. The Lodestar Pro was checked for historical eclipses of 1000-2500 BC from clay tablet records of Mesopotamia area presently available with British Museum. Wayne Mitchell has analyzed this data [Ref-8]. Lodestar Pro provided excellent match with ref-8.
9. Nearly 673 solar and lunar eclipses occurred in pairs of time gap of about nominal 15 days corresponding to roughly half lunar month. We need to search amongst these 673 for eclipse pairs visible in Kurukshethra, which occurred in "Thirteen" days.
10. A very detailed scan of all the visible lunar and solar eclipses for every year from 3300BC to 700 BC was made on the Lodestar software for Kurukshethra location. These were

tabulated and plotted. Maximum eclipse time gap (end of one eclipse and beginning of next eclipse for naked eye observers) was found to be about 379 hours while the minimum was about 332 hours. A plot of time gap between back-to-back eclipses versus eclipse pair number is shown below. (This time corresponds to maximum to maximum)

11. Nearly 672 pairs of eclipses occurred on earth, which in principle may have been visible at Kurukshethra. Amongst these, nearly 32 pairs would be occurring for period less than 14 days. Many of these were found to be weak penumbral eclipses of moon, and solar eclipses had such low obscurity as to raise the issue whether any body could see them.
12. Six pairs of "thirteen day" eclipses could be seen unambiguously. After serious analysis of all the eclipses, six eclipse pairs from 3129 BCJ, 2599 BCJ, 2056 BCJ, 1853 BCJ, 1708 BCJ and 1397 BCJ clearly are the best candidates for Mahabharata war year from "thirteen day" eclipse pairs view point.

Items in red show retrograde or *Vakri* motion

Graha (Planet)	3129BCJ	Mahabharata text
<i>Brihaspati</i> (Jupiter)	<i>U.Ashada/Shravana</i>	<i>Shravana-Vishakha</i>
<i>Sani</i> (Saturn)	<i>Revati</i>	<i>Shravana-Vishakha</i>
<i>Angaraka</i> (Mars)	<i>U.Ashada/Shravana</i>	<i>Magha</i>
<i>Shukra</i> (Venus)	<i>U Phalguni</i>	<i>Poorva Phalguni</i>
<i>Ravi</i> (Sun Solar)	<i>U Phalguni</i>	<i>Rohini</i>

The location of the planets at the time of eclipse pair is shown in table above. Clearly, only *Brihaspati*, and *Shukra* are the only planets near locations indicated in the *Mahabharata* text. This date of 3129 BCJ is a serious candidate date for consideration of *Mahabharata* war.

- **The first and oldest eclipse pair** from 3129 BC is unique. These fit the *Puranic* description that Sri Krishna passed away in 3102 BCJ, which is 27 years after the war. Our study confirms that *Kaliyuga* could have started in 3102 BCJ.